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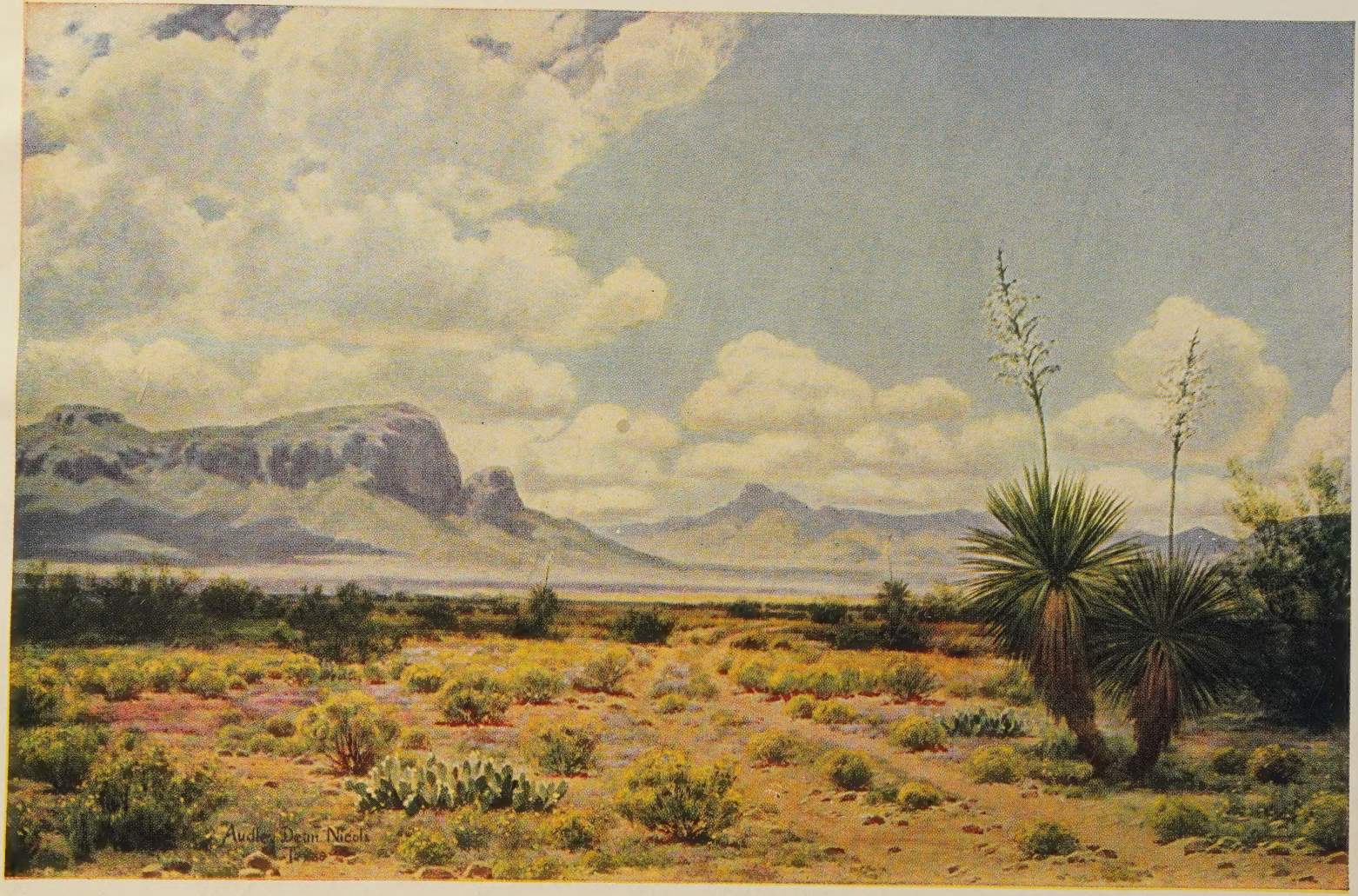


TEXAS PLAINS, BY AUDLEY DEAN NICOLS, A PRIZE PAINTING, SAN ANTONIO ART LEAGUE 1928

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Inscription—This stone marks the site of Camp Worth, a United States military post, named in honor of General William Worth and commanded by Major Ripley A. Arnold, 1849-1853. The camp protected the frontier against Indians, and was the beginning of the city of Fort Worth.

# THE LONE STAR STATE

## I. TEXAS A CONFLICT OF CIVILIZATIONS

IF you were to enter Texas from Louisiana and stop among the pines and red hills of East Texas, at the town of Nacogdoches, some one would point out to you the Old Stone Fort. If you continued west to Goliad or San Saba you would be shown the ruins of old missions; or if you went to San Antonio you would see several others still in a state of preservation. Over these forts and missions at one time floated the flag of Spain. They are but relics of Spanish dominion in Texas. Should your travels carry you to Matagorda Bay, on the Gulf coast, you might see the spot where La Salle built, in 1685, Fort St. Louis, upon which he raised the French flag. Then, while there are no shrines to commemorate the fact, the people of Texas know that the flag of Mexico displaced that of Spain and France. From the dome over the capitol at Austin and from other public buildings and schools, you will see flying a flag bearing a lone white star. This was the flag of the Republic of Texas, which displaced that of Mexico. Over it, or by it, flies the Stars and Stripes. But within the buildings, in glass cases, lie other flags, some of them blood-stained, and all faded—these are the Stars and Bars of the Confederate States of America which flaunted their colors during the war between the North and the South. Here are the six flags of Texas, which within themselves are mute evidence that the state has had a varied existence, many experiences; was something of an adventuress among the nations before she finally settled down to a quiet life among the sisterhood of states in the American Union. The purpose of this sketch is to tell the story of the life of Texas under the six flags.

When Columbus, an Italian in the employ of Spain, discovered America he gave Spain a claim to the whole New World of which Texas was a part. The Spaniards made good their claim to most of South America, to all of

Central America and to Mexico, and for more than three centuries maintained some control over Texas and the region west to the Pacific Ocean. Thus did Texas at the very beginning become a northern outpost of the Spanish empire in the New World. That is to say, Texas was a border state, a frontier, and therefore in direct contact with foreign powers, often hostile neighbors.

Among these neighbors was France. The French came in the early part of the seventeenth century and planted colonies in the St. Lawrence Valley. France pushed these settlements up the St. Lawrence to the Great Lakes, and then turned southward down the Mississippi, finally reaching the mouth of that mighty stream. Quebec on the St. Lawrence and New Orleans at the mouth of the Mississippi were French settlements marking the northern and southern tips of the French crescent which swept in a semicircle through the heart of the continent. The French were trappers and fur traders, and found along the wooded streams and valleys their best fortunes. The borders of the French empire and of the Spanish empire touched in what is now eastern Texas.

The English were a rather prosaic people who also staked out claims in the New World. They selected the Atlantic coast, a seaboard settlement, with the Spaniards to the south and the French to the north and west of them.

These were the three nations of Europe whose colonies bid for Texas. Of the first two nothing is left in Texas but ruined forts and missions, a few geographic names for towns, counties and rivers, and the lisping accents on the lips of some of the inhabitants. The English language is spoken everywhere, and English law and institutions prevail. These facts show that in the long contest the English race won the prize, though England herself lost it.

Why did the English win? There are many reasons, but they need not detain us. However, back of them all—of Spanish failure, French failure, and English success—is the reason—a better method of colonization. It was a contest of gold, fur, and farms. The Spaniards in the New World sought gold; the French sought furs; and the English, farms. Gold-seeking and fur-hunting are tasks for men and for men only. But farming requires the efforts of an entire family, and furnishes a home. Neither the Spaniards nor the French brought many women and children to America. If they wanted a home they had to marry native women, and this they often did, thereby producing a mixed breed half Indian and French or Spanish as the case might be. But the English steadfastly refused to mix with natives. They brought their wives and children and scorned the Indian wives and their half-breed children. The English, you recall, sent home for shiploads of women to become the wives of the single men of Virginia. It is significant that the price of transportation was paid in tobacco, the product of the hoe, and not of the rifle, trap, or miner's pick.

This much should be clear. Texas was a border region, occupied first by the Spanish, for a time by the French, and at length permanently taken over by the United States. It was the scene of a conflict among nations, and in the background of that conflict ever lurked the savage Indian with bow and arrow, horse and gun, ready to plunder, scalp and burn, and spread terror throughout the land.

With such a setting and such a situation Texas history must be interesting, filled as it is with heroism, pathos, and tragedy—a drama of nations played on a stage of far-flung plains, forests and mountains. Across that stage pass many figures, Spanish conquerors on horseback, black-robed priests, proud French explorers, English and American adventurers, Indians, Texas Rangers, cowboys and soldiers; and to-day a sturdy population of five million prosperous people.

### THE STAGE UPON WHICH THE HISTORICAL DRAMA HAS BEEN PLAYED

While the geography of Texas is treated at length in another chapter, a word must be said here by way of fixing in our mind the stage upon which the story of Texas has been played. Because of its enormous extent, Texas has a great variety of soil and climate. The southern part of the state—what is known as the Magic Valley of the Rio Grande—lies near the tropics and is a region of perpetual summer where oranges, grapefruit and palms grow the year through. Nearly a thousand miles away to the north and west is the Panhandle, with long and severe winters, often cold enough to freeze man and beast on the open range.

In the eastern part of the state one finds dense forests of cypress, pine and walnut; far out in the west the plains are so bare that mirages are often seen in summer, and no trees are in sight. Thus within the confines of one state is found the "dominion over palm and pine."

Texas is a land of contrasts, but the greatest is not between the tropical Rio Grande valley and the Panhandle, but between the forest and the plain. The 98th meridian runs through the centre of the state, and indicates approximately nature's division of the state into two parts as different from each other as one can well imagine. The line separates East Texas from West Texas. This division is made almost solely on the basis of rainfall. In East Texas rainfall varies from twenty to fifty inches or even more; in West Texas it varies from more than twenty to ten or less. In East Texas the country is well watered, heavily timbered, closely related in its soil and climate to such states as Louisiana, Mississippi and Arkansas, and is a rich agricultural country. West Texas is poorly watered, sparsely timbered or without timber, related in soil and climate to Kansas, Colorado and New Mexico. Agriculture does not flourish without irrigation in a region where rainfall is less than twenty inches. Therefore West Texas has not developed agriculturally so rapidly as East Texas has. But the open country and the grassy plains have proved to be the natural home of cattle, and there the cattle industry has developed. Thus we may say that East Texas was primarily an agricultural country; West Texas, a stock-raising country.

This country home near Quitman, Wood County, is almost typical of Northeast Texas. Rainfall is abundant and the country is well-wooded. This county is particularly adapted to diversified farming as nearly all crops do well.

Photograph, courtesy Farm and Ranch.

### EAST TEXAS THE FIRST SECTION TO DEVELOP

East Texas was the first to develop. The history of the state is largely written in East Texas. West Texas remained unsettled until after the Civil War, and the pioneer development is still under way on the plains. We should not be wrong in saying that East and West Texas are two states bound together under one government.

The Indians who inhabited Texas illustrated this difference between East and West Texas even better than our present population. Of the eastern Indians, the Caddos and Tejas (for whom Texas was named) may be taken as types; in the West the Comanches are typical of the western tribes. The eastern tribes lived

in permanent villages, tilled the soil, raised corn, pumpkins and potatoes—were, in short, for Indians, civilized. The Comanches in the west were entirely different. They lived on the plains, had no settled homes, but roamed at will over hundreds of miles, and made no attempt at agriculture. They were extremely warlike and ferocious, and terribly dangerous. One thing that made them far more dangerous than they were originally was that they learned to ride horseback.

### The Indians of the Plains and the Wild Horses

The early Spanish explorers allowed some of their horses to escape, and these horses pushed out in the plains, where they multiplied and formed vast herds of wild horses—sometimes called Spanish mustangs. The Comanches soon acquired great numbers of these horses, and found them useful in covering the wide distances of their boundless home. They learned to hunt the buffalo on horseback, to fight on horseback, in fact they almost lived on their horses. The eastern Indians offered little trouble to the Spaniards or to those who followed them in East Texas. But the Plains Indians were another matter. They were hard to conquer, and were in constant war with the Texans until long after the Civil War. The last fight with these Indians took place in Texas as late as 1881, the end of a conflict which had lasted for nearly two centuries.

This sketch of the Texas Indians is given here to furnish some knowledge of the natives themselves, and to illustrate the contrast between the eastern and western part of the great state. That contrast can be illustrated in numerous other ways. An examination of a county map of Texas will serve as well as any other. In East Texas the counties are irregular in form, and were laid off by natural boundaries, such as streams and hills. In the west there were few hills and fewer streams, and most counties are of the same size and order—as regular in form as a postage stamp bought from the post offices—each county measuring thirty miles square, and containing nine hundred sections of land.

In this sketch we may see something of the destiny of Texas, a prophecy of the course it has run. Sought in turn by the Spanish, French and English, it fell at last into the hands of Americans of English descent. It is and has ever been a border land, confronted on one or more sides by foreign and often hostile foes. It is divided on the basis of rainfall along the 98th meridian into East and West Texas. Most of the history has to do with East Texas, but West Texas presented some of the most novel and difficult problems that the Texans had to solve. We shall now take up the story in some detail.

## II. THE FRENCH AND SPANIARDS IN TEXAS

The king of Spain first heard of the land later named Texas through a Spanish explorer known as Cabeza de Vaca—which translated literally means "the head of the cow." Cabeza de Vaca was one of four survivors of an expedition sent to Florida. The party had no intention of coming to Texas, but met shipwreck on the Gulf of Mexico, and was left stranded in a new and strange land, far from the Spanish settlements in Mexico. They were captured by Indians and were enslaved, but eventually, after eight years of hardship and adventure, Cabeza and three others made their way to Mexico and thence to Spain. Thus the first white man to set foot in Texas did so through accident and misfortune which accompanied him through all his residence in that land.

In 1540 Francisco Coronado led an expedition into Texas from the West, thereby coming in contact with the plains country. He was sent to find a magic city which the Spaniards thought contained boundless treasures of silver and gold. It was probably Coronado's horses that escaped on the plains and gave rise to the wild herds that later made the land their home. Coronado did not find the great city that he sought because there was no such city to be found. The Seven Cities of Cibola existed only in the imagination of the adventurous Spaniards; it was the dream of gold that ever lured them on. It is possible that at about the time Coronado was on the plains of West Texas, De Soto's men, who had found the Mississippi River, touched the northern part of East Texas. Of this we are not sure.

### La Salle Hoists the Flag of France over Fort St. Louis

The first French explorers in Texas, like Cabeza de Vaca, came by accident,

in 1685. This party was led by La Salle, who had some years before come from Canada down to the mouth of the Mississippi, and saw the advantage of founding there a permanent French settlement. The king of France approved the plan, and La Salle set sail with four ships, one of which the Spaniards captured. La Salle missed the Mississippi, and landed in Texas on Matagorda Bay. The French built a fort which they named Fort St. Louis for the French king, and La Salle, knowing that the Mississippi lay to the east, made several heart-breaking efforts to find it. One of his ships had returned to France, the others were wrecked, and he therefore had to make his search overland through the malarial swamps and among hostile Indians. His men died of disease, rattlesnake bites, and Indian arrows, and, as if this were not enough, they fell out and fought among themselves as men do when hardships are too much for them. La Salle was proud and imperious and drove his men with no easy hand. At length, while he was far over in East Texas, they shot him, and his bones lie to-day in an unknown grave.

The fate of Fort St. Louis was no less tragic. The survivors there were reduced by smallpox and Indians, and when the Spaniards came at last to destroy them they found that the work had been done by the Indians. The fort was deserted, but the Spaniards found some five or six Frenchmen living among the natives. Thus ended in failure, tragedy and death the first attempt of the French to settle in Texas, an effort that lasted from 1685 to perhaps 1689. But as a result of La Salle's sacrifice the French claimed Texas and alarmed the Spaniards into action. But as yet Texas had no name.

West Texas is not so arid and forlorn as this scene in the Panhandle would seem to indicate. It shows a new branch line of the Rock Island, just built to tap the recently discovered oil fields of the region. The plains here extend for miles with only slight differences in elevation.

### How the name Texas came to be

Over in East Texas dwelt a tribe of Indians called the Tejas. When the Spaniards came up from Mexico searching for Fort St. Louis, they met some of the Tejas Indians and, so the story goes, these Indians asked one of the padres with the Spaniards, Father Manzanet by name, to come as a missionary to the Tejas Indians. Father Manzanet agreed, and did so. But this missionary zeal fell in with and made a part of the Spanish plans to barricade the country against the French. These Tejas Indians lived far over in East Texas, and to get to them

the Spaniards had to pass by many tribes who needed missionaries as much or worse than the Tejas.

As a result in 1690 a Spanish expedition left Mexico, bound for the land of the Tejas. They stopped on the way at Fort St. Louis, and Father Manzanet took great satisfaction in applying the torch to that French relic and watching it burn to the ground.

### THE FIRST SPANISH MISSION IN EAST TEXAS

The first thing the Spaniards did was to build a mission which they called San Francisco de los Tejas. This, the first Spanish mission in East Texas, was built of logs which have rotted so completely that we do not even know the place where it stood. But it gave Texas its name. The region was spoken of as the land of the Tejas, and this became in time, Texas.

With the disappearance of the Tejas mission Texas was left for twenty years to the Indians and wild animals. But finally the French—who you recall were trappers and traders—made a gesture at Texas that led the Spaniards to further effort. Saint Denis left Louisiana, crossed Texas, and came finally to the palace of the Spanish viceroy in Mexico. The Spaniards were chagrined and displeased to learn that a Frenchman had traveled so far in their country without meeting a Spaniard to stop him. The viceroy decided at once to establish permanent colonies in Texas for the purpose of keeping the French out. This decision led to the permanent settlement of Texas.

### THE OLD SAN ANTONIO ROAD IN TEXAS HISTORY

The result was the preparation of a large expedition for that purpose, and the Frenchman, Saint Denis, served as its guide. The party came overland, entered Texas near the present border town of Eagle Pass, and crossed Texas in a northeasterly direction to Nacogdoches. This route became known as the Old San Antonio Road, and is a notable landmark in Texas history. By the end of the year 1716 four missions were built in and around the town of Nacogdoches, and soon after two others were constructed at St. Augustine. These were feeble settlements, each held by a few soldiers and one or two priests, but they stood near the French and served to warn them that the Spaniards would keep them in Louisiana. In fact these Spaniards were much closer to the French in Louisiana than to their own countrymen in Mexico. Between them and Mexico lay hundreds of miles of wild land inhabited only by Indians.

It was quite natural that those in East Texas wanted nearer Spanish neighbors, wanted more than a savage wilderness at their backs. They asked that other missions be established. The request was granted, and the modern city of San Antonio was born. It was situated on a beautiful stream near some wonderful springs, now known as San Pedro. San Antonio made a half-way station between Spanish settlements in Mexico and in East Texas, and could also stand guard over the Gulf Coast in case the French undertook to come back by sea and rebuild La Salle's fort.

### HOW THE CITY OF SAN ANTONIO WAS FOUNDED

The Spaniards built both a mission and a fort. The former was called San Antonio de Valero; the fort, San Antonio de Bexar. A settlement grew up around and between them. What should it be called? Some called it San Antonio, others called it Bexar. But in the course of time custom worked out a compromise, and to-day we call the city San Antonio, and the county in which it is situated Bexar. The Alamo—the shrine of Texas—was a part of the original mission, established in 1718. Several other missions were set up near by, but you will read of them in another place.

It is interesting to note the contrast between the East Texas missions and those at San Antonio. In the timbered region of East Texas the missions and forts, with one exception, were built of logs and wood. To-day there is no sign of them left, and we know but little of them. But at San Antonio there was no timber, and the missions were fashioned of stone. The result is that they stand to-day as they were two centuries ago, beautiful relics of an age and civilization now gone.

### THE FRENCH ATTACK THE SETTLEMENTS IN EAST TEXAS

It was fortunate for Spain that such strong establishments were set up at San Antonio, for they were yet incomplete when the French struck the weak settlements in East Texas, plundered the missions and drove the Spaniards back down the San Antonio road. But the

# THE SHRINE OF TEXAN PATRIOTISM

Photograph, Ewing Galloway.

**The chapel of the Mission of San Antonio de Valero, better known as the Alamo Mission, because of the poplar trees which grew near by, is all that remains of a much larger collection of buildings. The mission was founded about 1718 but the chapel bears the date 1757. After the Mexican War the mission was long used as an army post. The chapel was purchased by the State of Texas, but the remainder passed into private hands. Through the patriotic zeal of Miss Clara Driscoll (now Mrs. Sevier), who purchased the property until funds were available, it was finally turned over to the Daughters of the Republic of Texas.**

French soon retired and the Spaniards returned for a time to the abandoned region of the Tejas.

In order to understand affairs in Texas, it is necessary to refer to what was said in the beginning about the Spanish, French and English claims in the New World. In 1754 the French and Indian War broke out in America and spread to Europe. France and England were fighting for possession of America. France lost, but rather than see Louisiana go to the English, France gave it to Spain. The Spaniards no longer feared the French, and forgetting perhaps the poor Indians, abandoned the forts and missions in East Texas. Soldiers, priests and settlers were ordered to San Antonio, which now became the great Spanish stronghold in Texas.

### THE UNITED STATES BUYS LOUISIANA FROM FRANCE

For the next half-century events moved rapidly among the nations of North America. After 1763 Spain owned the territory west of the Mississippi, and England owned that on the east. France was, for the time, out of the game. But in 1775 the English colonies revolted from England, and under the generalship of George Washington established their independence. Tnen Spain faced a new, very young, but bold and courageous nation—the United States of America. For reasons we need not give here, Spain returned Louisiana to France, and in 1803 the young United States purchased it for the sum of fifteen million dollars. The Americans had come with giant strides across the Mississippi Valley to the borders of Texas, and Spain would now be under the necessity of again setting up forts in East Texas. She would find it much harder to keep out the American home maker than the French fur traders who cared nothing for the land and never tried to take it.

## III. THE COMING OF THE AMERICANS

There is a familiar saying that straws show us the way the wind blows. The straws blowing from the United States across the Sabine into Texas indicated the winds of the mighty westward movement that was to carry the Anglo-Americans across the continent, encompassing all that stood in their path. Events in Texas remind us of a tornado within a great storm. Trouble came from the very start and continued until 1845, when Texas became a state in the American Union.

The first trouble was over the boundary in East Texas. Spain claimed the Arroyo Hondo as the eastern boundary, and the United States claimed the Sabine. The disputed region was declared a neutral ground over which neither should exercise control, and it thereby became a no-man's land, a lawless region where fugitives, bandits and adventurers could congregate and plan and execute their crimes. It is known in Texas and Louisiana history as the Neutral Ground, but a better name would have been the Robbers' Nest.

### THE FIRST AMERICANS WHO CAME TO TEXAS

In about 1800 American adventurers began to drift into Texas—the first straws before the wind. But we note that these men came on their own responsibility, and at their own risk. Heretofore the Spaniards and French came for their governments, under orders and with the support of their kings. But in the United States there was no king—each man was in large measure his own sovereign. At any rate these first adventurers came in defiance of the laws of Spain, and also without the consent or support of the government of the United States. They came "on their own hook." Such men are called filibusters.

The first of these was Philip Nolan, who came with a small band of men for the purpose, he said, of capturing wild horses. The Spaniards sent an expedition after him, and after killing him, captured his men, and sent them to Mexico for trial, where one was executed and the others kept in prison until most of them died.

In 1812 another expedition set out from the Neutral Ground with the avowed purpose of freeing Texas from both Spain and Mexico. This army was organized by a young army officer named Augustus Magee, who associated with himself a Mexican named Bernardo Gutierrez. They captured Nacogdoches, where Magee died, and the army pressed on to San Antonio, where they routed a Spanish force. But at the Battle of Medina the army was led into a trap and almost completely destroyed.

The third filibuster was Dr. James

Long of Mississippi. Long resented the fact that in a treaty of 1819 the United States gave up its claim to Texas. Long had some success at first, but failed finally, was captured and taken to Mexico, and after being set free, was killed by a Mexican.

### Filibuster and pirate continue to disturb the peace

These three expeditions enabled the Spaniards and Mexicans to get acquainted with the Americans. They proved to the Americans that the Spanish and Mexican inhabitants in Texas were not much to be feared. It was certain that Spaniards and Americans were not going to get on very well. Spain did not want any foreigner to cross the Sabine. The Neutral Ground furnished a rendezvous for adventurers, and the United States supplied courageous and hard-fisted men who were willing to risk a look at the forbidden land.

At the same time that the daring Americans were making incursions into Texas from the Neutral Ground, a Frenchman was making life extremely interesting for the Spaniards along the Gulf Coast. This was Jean Lafitte, the pirate, who had declared eternal war against Spain. He robbed Spanish ships on the high seas, and sailed away to his fortress on Galveston Island. He or some of his men captured American vessels, and the United States promptly sent a war-vessel to break up his profitable business.

### Texas surrounded on every side

For the period we have been treating—from 1800 to 1821—Texas might be described as an isolated Spanish province almost surrounded by enemies. On the east was the United States and the Neutral Ground, sending out a stream of troublesome adventurers. On the Gulf Coast were the pirates under Lafitte, and others of their ilk. On the north and west—in West Texas—were the wild and warlike Comanche Indians who delighted to swoop down on their fleet ponies, steal horses, plunder the settlements, and fly away to their home on the plains so quickly that none knew whence they came or where they went. But in the meantime the settlements at San Antonio, under the protection of stone forts and stone missions, held on and grew with some promise of permanent survival.

We must remember that all we have said about Texas applies to it as a part of the Spanish colonial empire. Mexico, of which Texas was a part, was a colony of Spain. By 1821 Spain was losing her grip on her colonies, and when we see them separating one by one from the parent country we are reminded of what a very wise Frenchman said when England lost her colonies which formed the United States. "Colonies," said the Frenchman, "are like fruit; when they get ripe they fall off." In 1821 Mexico, long in revolution, fell off and set up an independent government. Texas therefore had to look to Mexico and not to Spain for protection and government. At the time Texas had a miserable population of hardly more than four thousand souls, and this after more than a century of effort. The settlement of Texas was destined to come at last from the United States of the north rather than from Latin America of the south.

### Moses Austin desires to found a colony

It was stated in the beginning that the possession of North America was contested by Spaniards, Frenchmen and English—gold seekers, fur hunters and farmers. The farmers were the last to enter Texas. They came in 1821. In the year 1820 the governor of Texas was much surprised when an American who gave his name as Moses Austin, of Missouri, walked into the governor's office at San Antonio and asked if he might be permitted to bring a colony from the United States to settle in Texas. Well might the Spaniard be surprised, for Nolan, Magee and Long had come without any such show of politeness, and had made nothing but trouble for Spain in Texas. Naturally the governor refused, but through the influence of Baron Bastrop, for whom a Texas county and town are named, he reconsidered. Austin was authorized to bring in and settle three hundred families.

Moses Austin died soon after his return to Missouri, but his son, Stephen Fuller Austin, took up the task his father laid down, and carried it through with a sweetness and strength which has endeared him for all time to every Texan. Perhaps, had this young man known the hardships and suffering in store for him, he would have chosen an easier and less conspicuous path.

### The first permanent American settlement in Texas

Austin chose the most fertile region in Texas for his colony—rich agricultural land lying south of the San Antonio Road between the Colorado and Brazos Rivers. His first colonists came in December, 1821, and settled in what is now Austin County, near the mouth of the Colorado. These were the first American settlers, the advance guard of the westward movement.

The Mexican government was very generous under the flush of its new-born independence of Spain, and gave land freely as an inducement to immigrants. To each married man was given 4,428 acres, or nearly seven sections, and smaller amounts were given to single men. The man who would bring a hundred families would receive a premium of 23,000 acres—enough for a cattle ranch. It is no wonder that people in the United States were attracted by such offers.

Austin was not the only contractor. Other men followed, and we have DeWitt, DeLeon, McMullen and McGloin, and Robertson's colonies. But Austin was the first, the biggest and most important contractor, exhibited throughout better judgment than the others, and remained the most influential and successful among them. Men who took contracts were called empresarios, and we say that Texas was settled under the empresario system. All of these colonies were established south of the San Antonio Road in the most fertile and best watered region of the state. All settlements lay east of the 98th meridian, leaving the plains still undisturbed to the Comanches.

The Anglo-Americans, as these people from the United States are called, brought their slaves and plows, and began at once to open farms, and to plant cotton and corn. They brought rifles and Bibles, the former for protection and the latter for religious guidance. But they did not worry about the souls of the Indians; they set up no missions for them, and doubted at times whether Indians had souls. Here at last was a hard and stubborn set of men, who knew what they were about. Within fifteen years some twenty or twenty-five thousand were in Texas and more were coming all the time. Contrast this with the Spanish progress which in over a century had placed only four or five thousand inhabitants in the country.

## IV. TROUBLE BETWEEN THE AMERICANS AND MEXICANS: REVOLUTION

It would have been strange indeed had Mexico not become alarmed at the rapidity with which the Americans were settling Texas. They noticed that these Anglo-Americans did not become good Mexicans, were not Catholics, and seemed to have little respect for Mexican law and authority, and perhaps less for the Mexicans themselves. The house was becoming divided against itself, and thoughtful men soon realized that under such conditions it could not stand.

The first serious trouble came in 1826, when one of the empresarios revolted and declared Texas independent of Mexico. The rebellion failed, and the men that led it fled to the United States. This alarmed Mexico and led to an effort to check immigration from the United States by declaring that all slaves in Mexico should be free. The Mexican government knew that most people who came to Texas were from the southern states. They thought that if slavery were abolished the Americans would no longer come to Texas, and the problem would be solved. Through the influence of Austin and others, Texas was granted an exemption from the law and permitted to keep the slaves; but the act alarmed the Texans and increased their distrust of the Mexicans.

### Mexico attempts to stop American immigration

Then came what is known as the Law of April 6, 1830. In this law all the liberality extended by the Mexican government to Texas colonists was withdrawn. The law made the following provisions, all objectionable to the colonists:

(1) Further settlement from the United States was prohibited save in Austin's and DeWitt's colonies.

(2) Mexican convicts were to be sent to Texas for settlement.

(3) Mexican soldiers were to be stationed in Texas to guard the interests of Mexico, but under the pretense of protecting the Indian frontier.

The Anglo-Americans were now faced with a sad prospect. They were cut off from their friends and relatives in the United States who had hoped to come to Texas; they were to have convicts settled

among them; and were to have their movements watched by Mexican soldiers but little better, often no better, than the convicts themselves. The only thing that made the situation tolerable was the fact that Mexico could not enforce the laws that were passed. Mexico could send convicts and soldiers to Texas, but was unable to keep out the Americans.

The first clash between the Anglo-Americans and Mexicans came up over the efforts of the latter to collect custom duties on goods imported from the United States. In 1832 an order was issued requiring all ships bound for Texas to enter the port at Anahuac where a custom house was situated. The colonists preferred to bring goods up the Texas rivers to landings more convient to their towns and plantations, and they protested so vigorously against the order that it was withdrawn. The officer who issued this order was an American in the Mexican service, Col. John Bradburn. Bradburn gave further offense by encouraging the slaves to run away from their masters by telling them that slavery was forbidden in Mexico. Finally Bradburn arrested and threw in prison two prominent men, Patrick C. Jack and the immortal William B. Travis, and for the reason that the colonists played a rough joke on him.

Friends of the prisoners organized themselves, marched to Anahuac and demanded the release of the prisoners. A skirmish took place in June, 1832, in which one Texan and five Mexicans were killed. Blood had been drawn, and events marched rapidly toward revolution and freedom. Before the end of the summer every Mexican soldier had been driven from Texas. If the Mexican government needed any proof that the men of Texas were dangerous customers, not to be trifled with, it now had that proof.

This painting of Stephen F. Austin by Brand, hangs in the Hall of the House of Representatives. Though he is here represented in frontier costume, Austin was a polished gentleman at home in any society. Photograph by Jordan Company.

But strange to say, the Texans were not punished at this time for their actions. It happened that a revolution was just then in progress in Mexico, led by General Santa Anna, of whom we shall hear much. The Texans took a long chance and said that they drove the Mexicans from Texas to help Santa Anna. As good luck would have it, they bet on the right horse, for Santa Anna overthrew the government and became president.

The Texans were happy—as well they might be—at the news of Santa Anna's success. The president pretended to be the champion of free government, and the Texans expected much from his hand. What they received was quite another thing from what they expected and desired. But for the time they were happy.

They decided to send Austin to Mexico City to explain everything to the new president, and, if possible, to separate

Texas from Coahuila and make it a state in the Mexican Union. They even went so far as to prepare a constitution for Texas, which Austin took with him.

### AUSTIN IS ARRESTED AND KEPT A PRISONER

Santa Anna refused to separate Texas from Coahuila, but treated Austin cordially, and promised some of the reforms. Austin now set out for home, but before reaching Texas was arrested, returned to Mexico City, where he was thrown into prison, and for a time was kept in solitary confinement. The reason for his arrest was a letter he had written from Mexico advising the Texans to go ahead and organize a separate state government. It is possible that the Mexicans realized that they had in Austin a valuable hostage, and that the Texans would remain quiet as long as their beloved leader was a prisoner in Mexico. Austin went to Mexico in 1833 and got back to Texas in 1835, after fifteen months in prison.

When Austin reached Texas he found the people in a perfect ferment of excitement. Though he was the most patient of men, his patience was now worn thin, and he told his friends that the time had come for war. He issued a ringing call for men, who responded from every quarter, and on October 2, 1835, the first battle was fought at the town of Gonzales, where the Mexicans undertook to take a small cannon from the Texans. The Texans routed the Mexicans and kept the cannon.

### THE TEXANS NOW MARCH ON SAN ANTONIO

The Texans now called Austin to become their commander, and to this call he responded, worn and broken though he was by his long imprisonment. In October the army under Austin's command started for San Antonio, where a Mexican force was stationed. On the march to San Antonio the Texan army increased each day, until it amounted to about 500 men. Considerable fighting occurred around San Antonio, but the Mexicans held a strong position which was not easily taken. Meantime Austin was recalled and sent to the United States to procure aid, and Colonel Edward Burleson was chosen to command the army.

This Texas army was a motley crew. As long as there was fighting to do the men were happy enough, but they hated inaction, and when there was no fighting, they wanted to go home. There were many brave and courageous men present, Bowie, Travis, and an eccentric American whom Texans knew as Old Ben Milam.

Just as the army was on the point of leaving San Antonio, Milam stepped before the men and shouted to them a challenge: "Who," he said, "will go with Old Ben Milam into San Antonio?" Here was a call to fight to which three hundred men responded. At the end of four days the Mexicans surrendered, but Old Ben Milam lay dead upon the field. The Texans now took possession of San Antonio, establishing themselves comfortably in the Alamo, where we shall soon meet them again, and for the last time.

### SANTA ANNA AND HIS ARMY MARCH TOWARD SAN ANTONIO

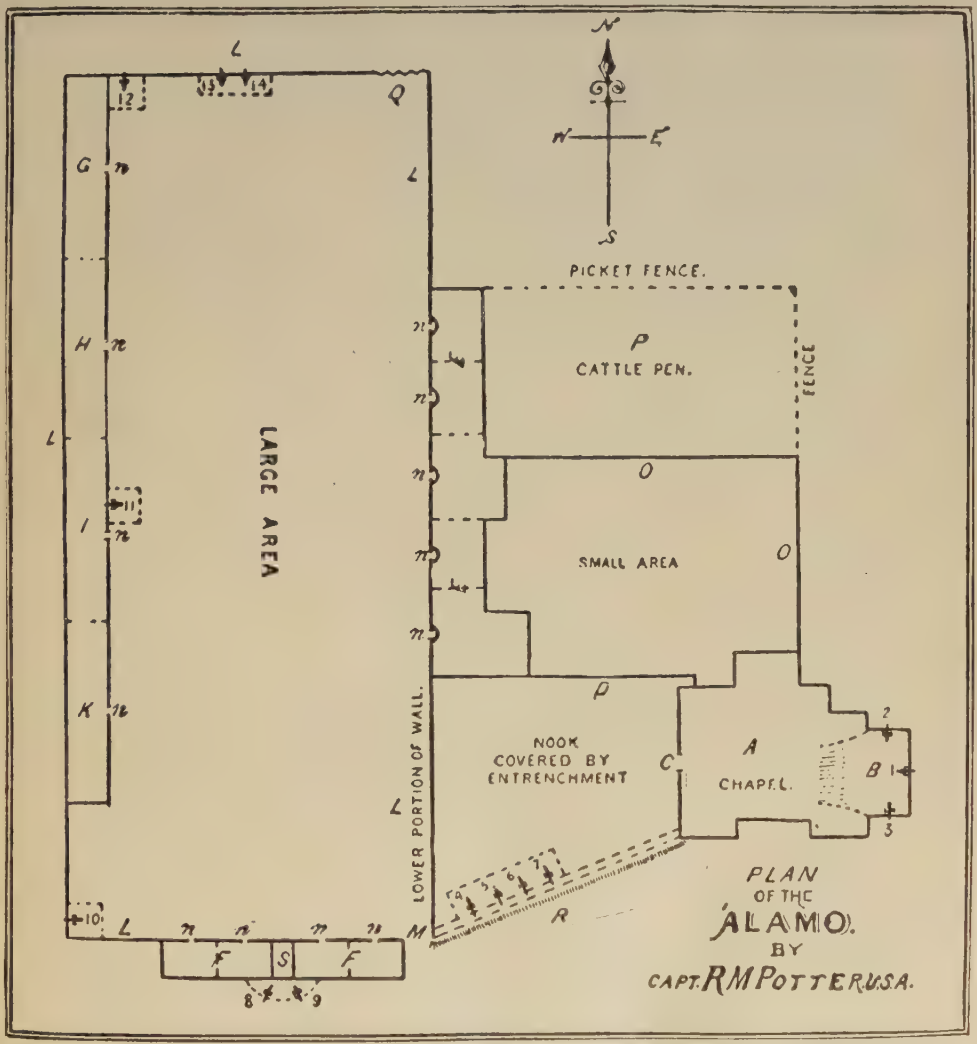
While Santa Anna was glad to have whatever help the Texans gave him when he was trying to make himself ruler of Mexico, he was probably not convinced of their sincerity. At any rate it was now learned that he was coming to Texas with an army of five thousand men with the purpose of driving every Texan back to the United States. Up to this time, the Texans claimed they were fighting for a liberal Mexican government, but the face of matters changed. More and more favored striking for complete independence and being done with Mexico and the Mexicans once and for all time.

Delegates were chosen to meet at Washington on the Brazos on March 1, 1836. Before the convention met, Santa Anna, as we shall see later, was before San Antonio with his Mexican army. The convention met on the day set, and the following day declared Texas a free and independent republic, and a committee was appointed to draft a constitution. David G. Burnet was elected to serve as president until the war ended, when the people would elect a permanent president. The constitution provided for a president, vice-president, a congress consisting of a senate and house of representatives, and a supreme court. It was almost an exact copy of the government of the United States. On March 4, General Sam Houston was reelected commander of the Texas army.

### NEWS OF THE ALAMO REACHES THE CONVENTION

While the convention was still in session news came of the most terrible disasters—not one, but many—that had

befallen the Texas army. Santa Anna had taken San Antonio, massacred its defenders, and now had started east to make good his threat to drive every American from Texas. Let us follow for a while the fortunes of the Mexican army.




This plan of the whole Alamo was made in 1860 while the ruins were still standing. What we know as the Alamo was the chapel marked A. In one end was a mound of earth B, from which three cannon were fired. The stone barracks are marked E and F. Stone storerooms G to K stood just inside the high walls marked L. Gates are marked M and S, while O shows the walls of the small area, P the cattle pens and Q the broken wall. Most of the fighting took place in the large area or in the rooms of the barracks.

When the Texans in the winter of 1835 took San Antonio, a small garrison was left there to hold the city. Early in February the command was given to Colonel William Barrett Travis, who had about 150 men with which to defend the place. Travis sent out letters stating that the Mexicans were in sight, and asked for reinforcements, knowing that a larger Mexican army was approaching along the San Antonio Road. Only one force came to his aid. Thirty-two men from Gonzales under Captain Albert Martin made their way through the Mexican lines into the Alamo. The Texans now numbered a little more than 180. Among these men at the Alamo were James Bowie and David Crockett; the latter had just arrived from Tennessee with his rifle, his violin, and a fund of droll stories.

The men in the Alamo realized full well their plight, and, in his appeals for help,

Travis wrote what has been called the most heroic document in American history. This letter is preserved to-day in the state capitol at Austin, and runs as follows:

Commandancy of the Alamo,
Bejar, Feby 24th, 1836.

To the People of Texas and all Americans in the World.

Fellow Citizens and Compatriots: I am besieged, by a thousand or more of the Mexicans under Santa Anna. I have sustained a continual bombardment and cannonade for 24 hours and have not lost a man. The enemy has demanded a surrender at discretion, otherwise, the garrison are to be put to the sword, if the fort is taken. I have answered the demand with a cannon shot, and our flag still waves proudly from the walls. *I shall never surrender or retreat. Then,* I call on you in the name of Liberty, of patriotism and everything dear to the American character, to come to our aid with all dispatch. The enemy is receiving reinforcements daily and will no doubt increase to three or four thousand in four or five days. If this call is neglected, I am determined to sustain myself as long as possible and die like a soldier who never forgets what is due to his honor and that of his country.

VICTORY OR DEATH.

William Barrett Travis,
Lt. Col. Comdt.

But no help came save that already mentioned, and day by day the Mexican lines closed in. On March 4—two days after the declaration of independence—Santa Anna held a council of war and prepared to storm the Alamo. At dawn on March 6, the lines were formed, a red flag was hoisted to indicate no quarter, and the advance was begun. Language fails us when we attempt to describe this battle, but perhaps the spirit in which it was fought was indicated on the Texas side by *"I shall never surrender or retreat,"* and on the Mexican side by the blood-red flag.

### The story of the massacre inflames all Texans

Before the end of the day the work was done, and the hundred and eighty-odd Texans lay dead surrounded by five or six hundred of their foes. But this death did not satisfy Santa Anna, and the bodies of the Texans were piled in a heap on brush and lumber and burned. The men of the Alamo were thus in reality a flaming sacrifice offered by themselves on the altar of Texas freedom. Though Texas could ill afford to lose these brave men in this hour of need, still their death was not in vain. It inflamed those left—"and all Americans everywhere"—with a spirit of unquenchable hatred that made ultimate victory and revenge certain.

The massacre occurred in March, and in the month of April Santa Anna and the Mexicans paid the price for their crime. Again Texas is richer that these men died. They have become immortal, Travis, Bowie, Crockett and the rest, and are honored and reverenced by every Texan boy and girl who loves liberty and freedom. They consider it a great privilege to make, in vacation time, a pilgrimage to San Antonio, and view the Alamo in the heart of that beautiful city.

### Santa Anna marches to finish the work

But let us follow Santa Anna. With San Antonio taken, he considered his work half done. By way of finishing it up, he would march eastward, spread his army like a net, drive the people before him and destroy those that were caught. General Houston hurried away to Gonzales and there took charge of a Texas force of less than four hundred men. When the rumor that the Alamo had fallen was confirmed, General Houston realized that he would have to retreat in order to gain reinforcements and train his men. His line of retreat led him eastward through the settlements, and soon the Mexican army was in hot pursuit.

Before Houston left Gonzales he undertook to call to him the scattered commands of Texans. Johnson and Grant were at San Patricio with a small band, King and Ward were at Refugio, and a larger force under Colonel James W. Fannin was at Goliad. To make a long story short, the Mexicans either captured or killed all these men. On March 27, every Texan in the hands of the Mexicans, including Colonel Fannin, was marched out and shot. About all that was left was the little army under General Houston.

### The runaway scrape, of which you have heard

When the Texan army left Gonzales, after burning the town, and began to retreat toward East Texas, there took place what is known as the Runaway Scrape. News of the fall of the Alamo, and of the inhuman butchery of Fannin's men, spread consternation among the inhabitants of Texas. General Houston

# DAWN AT THE ALAMO, BY H. A. McARDLE

The artist sought to paint the moment on the morning of March 6, 1836, when the large Mexican force stormed the Alamo which had been bombarded for eleven days. What we now know as the Alamo was the chapel, which was only a small part of the whole mission. Many of the figures are portraits.

Photograph by Jordan.

gave the refugees his baggage wagons to aid them in their flight, but even so thousands of them went on foot, with no protection save what they wore. It was the spring time, the streams were swollen from recent rains, and could hardly be crossed even in ferry-boats. There was intense suffering among the women and children, and some of the latter died on the way. Santa Anna's army was sweeping Texas clean. General Houston was retreating, but remained between the refugees and the Mexicans.

### The spot where Texan independence was won

Finally the time came for him to strike. On the banks of the San Jacinto River the Mexicans were caught in a trap, but still outnumbered the Texans almost two to one. The battle of San Jacinto was fought on April 21, 1836, and the whole Mexican force was either killed or captured. This in itself meant little, but fortunately for the Texans, Santa Anna himself was captured, and this alone ended the war. Santa Anna agreed to recognize the independence of Texas, and while a prisoner, sent orders to all his officers to set out for Mexico.

As soon as news of the victory reached the people in the Runaway Scrape they turned about and came back to their homes. One little girl, who wrote about it later, said that they reached home on Sunday morning at dawn, found her father's books scattered over the yard, and the hogs in the house. But the plow was safe because her father had hidden it before he left. Although it was Sunday, her father hitched up his team and went to plow his corn. The farmers had won Texas and were to keep it.

## V. THE REPUBLIC OF TEXAS

With the war over the Texans turned to the task of rebuilding their homes, raising their crops, and organizing a permanent government. An election was held in July for the purpose of choosing the officers of the government. There were three candidates for president, Stephen F. Austin, whom we know well, Henry Smith, who had been chosen governor of Texas prior to the declaration of independence, and General Sam Houston, victor at San Jacinto. General Houston was elected the first president of the new republic, and he proved his worth in peace as well as in war.

### Why Houston was chosen rather than Austin

You may wonder why Houston was chosen over Stephen F. Austin, the father of Texas. There were several reasons. At the beginning of the war Austin was conservative, and did not travel as fast toward revolution as some of the other leaders. In the second place, Austin lacked the political gift of being able to attract public attention to himself. He did not want to do so, and said once that he preferred "to slide along without any noise." Houston had to a marvelous degree the gifts that Austin lacked—that is, of attracting notice. He had a commanding appearance, a compelling personality, and a way of wearing his clothes that made people remember him. He was equally at home in the halls of congress, in an Indian wigwam, on the field of battle, or in the chair of the president. People either loved him or hated him.

Just at the time the election was held, Houston was the hero of San Jacinto, the man who had destroyed the Mexican army and ended the war. The people wanted him, and elected him over the quiet and self-sacrificing man who had done so much for Texas. But it was well that they did, for Austin died before the end of the year. The manner of Austin's death tells us the extent of his sacrifice. The account here given is from the pen of his biographer, Professor Eugene C. Barker.

> He was a man of warm affections, and loved the idea of home, but he never married. Texas was home and wife and family to him. He died on a pallet on the floor of a two-room clap-board shack, a month and twenty-four days past his forty-third birthday. His work was done, but he was denied the years so hardly earned for the enjoyment of its fruits. There is a certain poetic completeness in this, but the prosaic mind rebels. Austin sowed unselfishly and abundantly, and he deserved also to reap.

### Texas asks for admission to the United States

Though Texas had won independence, and had been recognized by the United States and several European countries, its difficulties were by no means over. The people hoped that at an early date Texas might enter the Union, and thereby receive the aid and protection of the United States. At the time Houston was chosen president, the Texans voted by an over-

# WHERE INDEPENDENCE WAS WON

The battle of San Jacinto was fought where Buffalo Bayou and the San Jacinto River come together. The battlefield is now a state park, and is a favorite resort, though there is now little to remind one of the bloody contest. The inset is General Antonio Lopez de Santa Anna, the Mexican commander.

Santa Anna was captured the next day and brought before Houston, who was lying wounded under a great oak tree. In this picture by Huddle, which hangs in the Capitol, thirty-four of the figures are said to be historic. Deaf Smith, the scout, is easily recognized, and Rusk and Lamar stand beside the tree.

Photographs, San Jacinto by Eidson; Surrender by Jordan; Santa Anna courtesy Witte Museum.

whelming majority to enter the Union. But for various reasons, which will be given later, Texas did not enter the Union until nearly ten years later. In this period from 1836 to 1845 Texas maintained itself as an independent nation under the Lone Star flag, and was called the Lone Star Republic.

During this period Texas had bitter enemies on three sides. To the south were the Mexicans, and to the west and north were the hostile Indians. The financial condition of the state was such that it was almost impossible to maintain a standing army to guard these borders. The work was done largely by a small mounted force known as the Texas Rangers. The force was first organized during the revolution to guard the Indian frontier. After the war the rangers were stationed at San Antonio to guard both the Mexican and the Indian borders.

These Texas Rangers were remarkable men and fearless fighters. They had to be mounted because their enemies, the Comanches and Mexicans, were mounted. They were the first men to use the six-shooter against the Indian, and found it very effective for mounted combat. Before the use of the six-shooter, the Indian with his bow and arrows and his skill in riding was a better mounted fighter than the Texans or Americans with their clumsy single shot, ball and powder guns. The six-shooters enabled the Texas Rangers to fight on horseback.

The most famous leader of the Texas Rangers was Captain John C. Hays. Hays and his rangers were dearly loved by the Texans, and hated and feared by the Indians and Mexicans.

### TEXAS UNDER THE LONE STAR FLAG OF THE REPUBLIC

President Houston was succeeded in 1838 by Mirabeau B. Lamar. Lamar and Houston were political enemies, and held very different notions about conducting the government. Houston favored peace with the Indians, a small army, no navy, and strict attention to home affairs. Lamar favored a warlike policy with the Indians, a large army to wage it, and a vigorous policy toward Mexico. Under his administration Texas plunged deeply into debt. At the next election the people returned General Houston to the president's office, and he immediately adopted a programme of strict economy, a "pay as you go" policy, which improved somewhat the financial situation.

**While Texas was a republic both France and Great Britain were very friendly, hoping to gain a foothold on the continent or else to build up a rival to the United States. Both sent ministers to Texas, and France went so far as to build this official residence which is still standing.** Photo, Jordan Company.

Throughout the period of the Republic there was continual trouble with Mexico. In June, 1841, an expedition of about 270 men left Austin for Santa Fé with a view to opening trade, or, if conditions were favorable, to place Santa Fé under the control of Texas. The members of the expedition suffered intensely in crossing West Texas, were harassed by the Plains Indians, and reached Santa Fé in a destitute and starving condition. All were captured and marched on foot to Mexico City. They were terribly mistreated by brutal officers, and kept in various prisons for many months, when those who had survived were liberated.

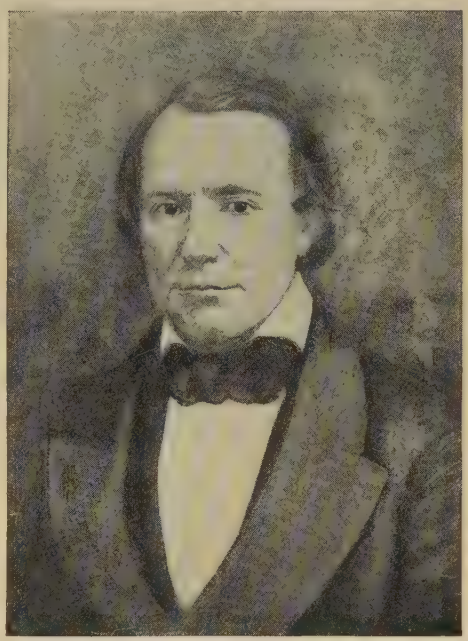
### MEXICO IS UNWILLING TO RECOGNIZE THE INDEPENDENCE OF TEXAS

In 1842 two Mexican forces invaded Texas and captured San Antonio, but retired before a Texas army could gather. In the fall of that year a Texas force marched to the Rio Grande, where a part of the men turned back. About three hundred crossed over and took the town of Mier, but were soon surrounded and forced to surrender. These men were also started on foot to the City of Mexico. They made an effort to escape, were recaptured, and at the order of Santa Anna, who was in power once more, every tenth man was shot. The others were lodged in prison, and all were not freed until 1844. This is known in history as the Mier expedition. Thus we may say that both the Santa Fé and the Mier expeditions ended in failure and terrible disaster.

The last president of the Republic of Texas was Dr. Anson Jones. During his administration the United States finally agreed to the annexation of Texas to the Union. Mexico now became alarmed and offered to recognize Texas and to cease hostilities. But it was too late. On February 16, 1846, President Anson Jones delivered his farewell address, and gave over the office of president to Governor J. Pinckney Henderson. The Stars and Stripes now floated over Texas.

## VI. TEXAS AS A STATE IN THE UNION

One of the results of the annexation of Texas by the United States was immediate war with Mexico. On this occasion the Texans got the best of it. The ranger captain, John C. Hays, recruited a regiment of rangers and led them into Mexico to do scouting and spy work for the American army. Many of those captured on the Santa Fé and Mier expeditions now returned to Mexico as Texas Rangers in the United States army. They rendered good service under their leaders such as Hays, Ben McCulloch, Big Foot Wallace and others. They were well mounted, armed with rifles and Colt six-shooters—the first six-shooters used in the American army—and the Mexicans were terribly afraid of them. As a result of the Mexican war, which ended with the peace of Guadalupe Hidalgo in 1848,



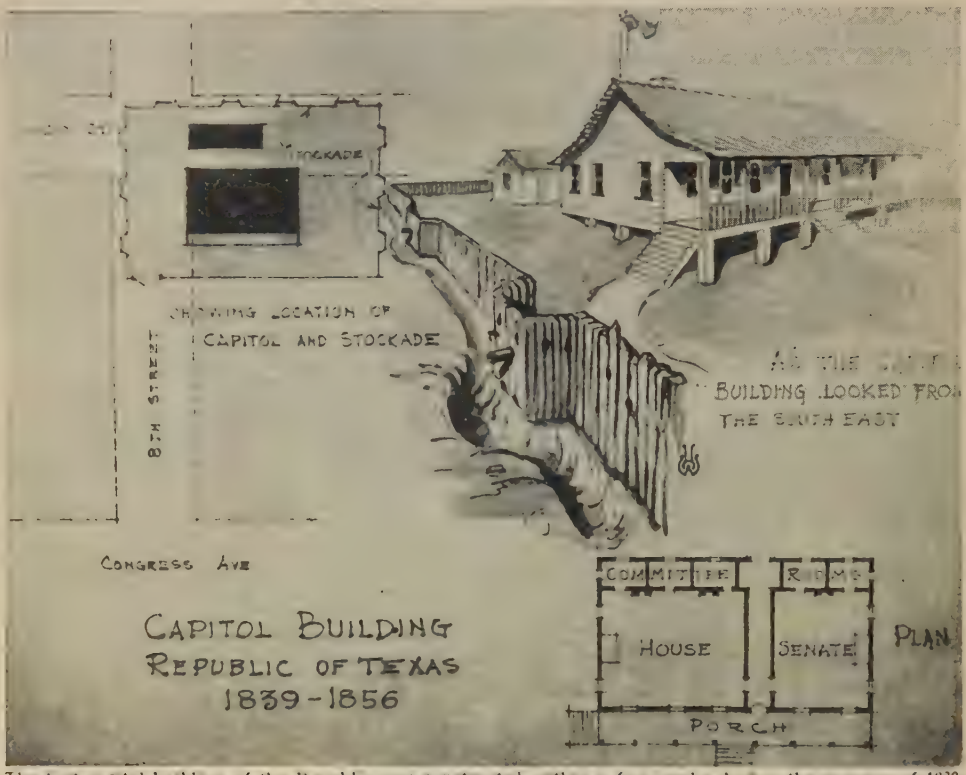
Mirabeau Buonaparte Lamar, second president of the Republic of Texas, was born in Mississippi, but came to Texas in 1835, and at once took a prominent place. He is called the "Father of Public Education in Texas."

the United States extended its western boundary to the Pacific, coming into possession of a vast area now comprised in California, New Mexico, Arizona, Utah, Idaho and Wyoming. In return the United States paid Mexico $15,000,000, a very small sum for so much land.

### THE BOUNDARIES ONCE CLAIMED BY TEXAS

When Texas entered the Union it claimed much more territory than we now see within its boundary. In fact, Texas claimed territory now included in parts of New Mexico, Oklahoma, Kansas, Colorado and Wyoming. The United States would not agree that all this territory

# AUSTIN IN THE EARLIEST DAYS




The first capitol building of the Republic was constructed within a few weeks during the summer of 1839. The diagram shows the wooden building with the stockade surrounding it, and also the floor plan. On the left is shown the location if it were placed on the street plan of the present city.

In January, 1839, the Congress of the Republic voted that a commission be elected to select a site for the capitol. This commission bought 7,135 acres of land for $21,000, and an agent was appointed to lay out a town and build a capitol. This old print is dated 1844, and gives an idea of how the village then looked.

Pictures from Jordan Company.

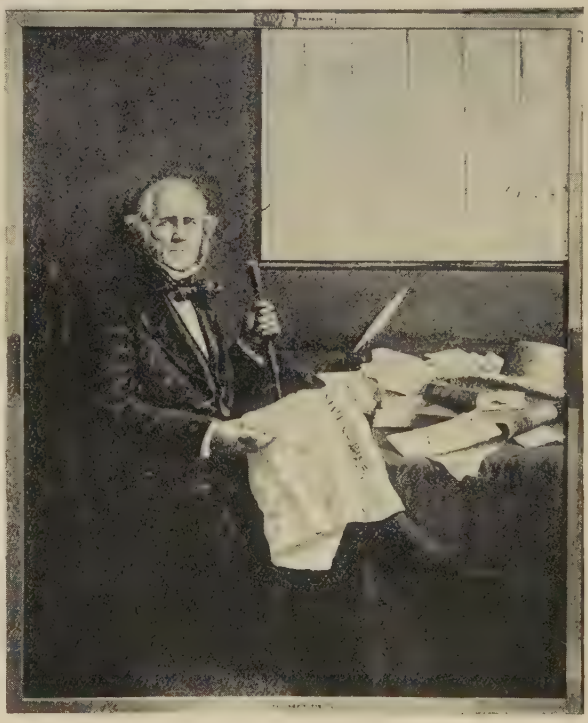
# THE TOWN GROWS INTO A CITY

The second capitol did not occupy the same site as the first but was placed at the head of Congress Avenue. As you can see, Austin was a sleepy town, with little need for traffic regulations in 1876. The streets were unpaved and were muddy in wet weather. The capitol was burned in 1881.

The new capitol was begun in 1883 and finished in 1888. We show you a picture of it elsewhere. Fifty years have made great changes in the appearance of Congress Avenue. The horse has practically disappeared in favor of the motor car, and mud no longer troubles the traffic. Photographs by Jordan Company.

belonged to Texas. Finally, in 1850, it was arranged that Texas would accept the boundaries that you now see on the map, and for this concession would receive from the United States $10,000,000. Texas was deeply in debt, but this large sum paid the debts and left the state in good financial condition. You will notice that all the land given up lies west of the 98th meridian, and much of it was inhabited only by the Plains Indians. All the white people at that time lived east of the 98th meridian.

When Texas entered the Union it was on condition that the state should have all the land, and that the United States should take all the Indians off it. If you look at a map of the United States, you will find in Texas neither Indian reservations nor national parks and monuments, such as are found in other western states. The United States owned the public lands in the other states, and from these public lands the parks and Indian reserves have been made. The removal of the Indians from Texas was not the blessing the Texans hoped it would be. These Indians were established on reservations in Oklahoma, and continued to raid into Texas for nearly forty years. The Texas Rangers were reorganized to guard the Indian frontier of Texas.



Though this painting of Sam Houston by Bernhard Gordon is recent, it represents the old hero at the age of sixty, about the middle of his service in the United States Senate.

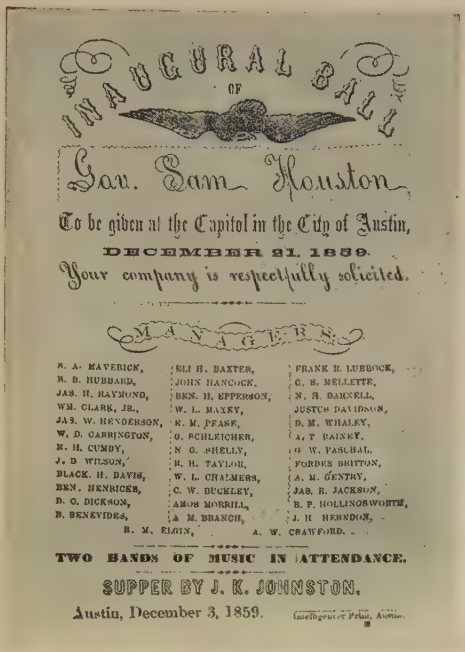
### Texas decides to go with the other southern states

When the Civil War approached in 1860, Texas went with the South, and passed the ordinance of secession in February, 1861. Our old friend, General Sam Houston, was governor of Texas at the time. He opposed secession, and made speeches against it that would have caused a lesser man to be mobbed. He foretold with the vision of a prophet the outcome of the war, predicting that the country would run red with human blood, and that the South would lose in the end. But the people of Texas were southern people, largely from Louisiana, Alabama, Mississippi and other southern states; they had slaves who were employed to raise cotton on the fertile river valley farms, and they turned from Houston, deposed him from office, and threw in their lot with the Southern Confederacy. Houston retired to his home at Huntsville, where he died shortly afterward, and where he now lies buried.

Texas was less injured by the Civil War than any other southern state. It lay far west of the Mississippi, and practically all the fighting occurred east of it. There were few engagements fought in Texas, and these were of little importance. The Union forces captured Galveston, and later Brownsville, near the mouth of the Rio Grande, but they were unable to hold either place very long. It is interesting to note that the last battle of the war occurred in Texas. This battle indicates how far away Texas was from the theatre of action; it was fought more than a month after Lee surrendered, but no news of peace had reached these troops.

### Reconstruction days are remembered to the present

With the war over, Texas went through the experience of Reconstruction,



INAUGURAL BALL
OF
Gov. Sam Houston

To be given at the Capitol in the City of Austin,
DECEMBER 21, 1859.
Your company is respectfully solicited.

MANAGERS

| | | |
|---|---|---|
| S. A. MAVERICK, | ELI H. BAXTER, | FRANK B. LUBBOCK, |
| R. B. HUBBARD, | JOHN HANCOCK, | C. B. MELLETTE, |
| JAS. H. RAYMOND, | BEN. H. EPPERSON, | N. H. DARNELL, |
| WM. CLARK, JR., | W. L. MAXEY, | JUSTUS DAVIDSON, |
| JAS. W. HENDERSON, | E. M. PEASE, | D. M. WHALEY, |
| W. D. CARRINGTON, | G. SCHLEICHER, | A. T. RAINEY, |
| R. H. CUMBY, | N. G. SHELLY, | G. W. PASCHAL, |
| J. D. WILSON, | R. H. TAYLOR, | FORDES BRITTON, |
| BLACK. H. DAVIS, | W. L. CHALMERS, | A. M. GENTRY, |
| BEN. HENRICKS, | C. W. BUCKLEY, | JAS. R. JACKSON, |
| D. C. DICKSON, | AMOS MORRILL, | B. F. HOLLINGSWORTH, |
| B. BENEVIDES, | A. M. BRANCH, | J. H. HENDON, |
| B. M. ELGIN, | A. W. CRAWFORD. | |

TWO BANDS OF MUSIC IN ATTENDANCE.

SUPPER BY J. K. JOHNSTON.

Austin, December 3, 1859. Intelligencer Print, Austin.

**This invitation to the inaugural ball bears, among the managers, the names of several men important in Texas history, including three governors.**

and a bitter experience it was, worse than the war itself. The state was overrun with carpet-baggers from the North—so called because they carried all their worldly goods in a carpetbag—and by scalawags. These men, under the protection of Federal soldiers, took charge of the government and ran it in their own interest. The public debt was increased by extravagance of the officials, and so were the municipal debts. According to a newspaper story of recent date, one large city in Texas is still paying on the debts made during this time by the so-called Reconstruction government.

By 1876 the Northern soldiers were withdrawn, and the government passed back into the hands of the white citizens of Texas. The story of Texas from this date until the present is one of uninterrupted progress, less rapid at times, but always forward.

In 1875 a convention was called to draft a new constitution for the state. This is the constitution that we have today, though it has been many times amended. You can read of it in the chapter on the Government of Texas.

After the Civil War Texas was still troubled with Indians on the plains, and with raids from bandits and cattle thieves on the Rio Grande. The Texas Ranger force was reorganized with Major John B. Jones in command. He formed several companies and stationed them in a line of forts or camps from the Red River on the north to the Rio Grande on the south. The rangers not only had to fight Indians and border bandits, but had to go into the interior to break up feuds and keep down horse and cattle theft.

## How the Great Cattle Industry Sprang Up

It was during the period following the Civil War that West Texas developed, and to tell that story we must learn something about the cattle industry. When the war ended Texas was in poverty, and there was no money in the state, but there were thousands upon thousands of cattle. Texas is a natural grass country, especially in the southern and western parts, and since the winters are mild the cattle could live the year through on the range. In fact, they grew wild, forming great herds that had no owner. But for these cattle there was no market in Texas, and there appeared to be no way to get the cattle out of Texas. At this time there was developing, in the North, factory towns and great cities. Here much meat was consumed, and the price of cattle was high. Besides the

Courtesy, Witte Museum.

**This Confederate flag was carried in the skirmishes at Mansfield and Pleasant Hill, April 8–9, 1864.**

North was now prosperous and had plenty of money to buy meat or cattle, or anything else that was needed or desired.

Someone conceived the notion, in 1866, of driving a herd of cattle from Texas to the northern market, or at least to a railroad that could ship them to market. After many adventures this first herd of cattle was brought to the railroad in Missouri, where buyers paid for them their good gold, more than the owners of the cattle had ever expected to see. Year after year other Texas herds went up the trail, which was variously called the Chisholm Trail, or the Texas Trail, and money continued to flow back to Texas.

Fort Davis, established in 1854 to protect the settlers on the way to California from the Indians, was named for Jefferson Davis, Secretary of War. It was taken over by the Confederacy in 1861, but was reoccupied in 1867. When the Indians were subdued, the fort was useless and was finally abandoned in 1891. This picture was made in 1887. The town which grew up around the fort is now the county seat of Jeff Davis County.

Draw a line from Fort Worth, Texas, to Abilene, Kansas, and you will find that it follows closely the 98th meridian. The cattle were driven this way because the country was open, unsettled, and there was so much grass that the cattle could live and fatten on the way. It became apparent that out on the Plains to the west millions of head of cattle could be raised for this profitable and new-found market. In a short time cattle ranches were set up, not only over West Texas, but over the whole plains country, the former home of the mounted Indian and the buffalo. This was the first step in the development of West Texas.

### Barbed Wire Marks the Doom of the Free Range

The second step came with the invention of barbed wire. As long as the pioneers remained east of the 98th meridian they had no trouble in securing fencing materials. Most of the fences were made of rails split from logs of the forest. Others were made of rocks. But west of the 98th meridian there was no timber and few stones. There was no way to fence the millions of acres of level land and therefore protect crops.

In 1874 barbed wire was placed on the market for the first time. This invention made it possible to fence the plains, and occupy them. The open range rapidly gave way to great ranches, and then the farmers began to move west and take up the public land. With the country all fenced, and much of it occupied by farmers, it was no longer possible for the Texas cattleman to drive his herds for two thousand miles on a grassy highway to market. But it was no longer necessary, for the railroads had been extended and the cattle were now loaded on to cars and shipped to Kansas City,

St. Louis or Chicago. Later packing-houses were built at Fort Worth.

### FENCING THE RANGE ALMOST LEADS TO WAR

When the country was first fenced with barbed wire some cattlemen of Texas resented it bitterly. They were accustomed to the open range, and did not think that the plains would make good farms. Groups of men organized and began to cut the fences as rapidly as they were built. In some places the owners actually took down the fences and rolled them up to keep the wire from being cut. The Texas Rangers were called out to help stop fence-cutting, and many are the amusing stories of those days. Finally, in 1884, fence-cutting reached its height in Texas. Governor John Ireland called a special session of the legislature, which made fence-cutting a penitentiary offense.

As a matter of fact, few men were sent to the penitentiary, but the law deterred many from becoming fence-cutters. One Texas cowboy said, "I told the boys they had just as well put up their wire-cutters and go to cutting posts, for barbed wire had come to stay." Not only that, but the farmers had come to stay. Since 1885 they have spread over West Texas wherever the land is suitable for agriculture. Many large ranches remain in Texas, but each year now sees some of these cut up and sold off as farms.

Of late years the history of Texas has been but a component part of that of the United States. The population continues to increase rapidly, and prosperity abounds everywhere. In the names of the cities we recognize the names of some of the men who did much for Texas. Austin is the capital, Houston is the great port city, destined, so the residents believe, to be the wealthiest and most populous city in Texas. Practically every Texan mentioned in this sketch has a county or town named for him.

The latest and most spectacular development in Texas of late years is the oil industry. The famous Spindle Top well came in near Beaumont in 1901. This was not the first oil well in Texas, but it was the first gusher. To-day Texas is one of the leading oil-producing states of the Union.

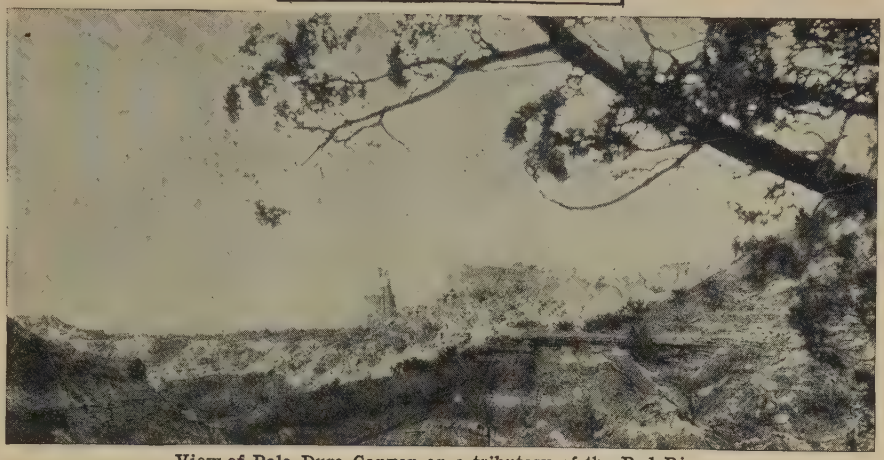
**Fort Sam Houston at San Antonio is the largest military post in the United States. All branches of the service are represented and about 12,000 troops are regularly stationed here. This is the infantry parade ground.** Photograph, courtesy Missouri Pacific Lines.

This brief story has omitted far more than it has told about Texas. Other chapters will supply much that is here omitted or touched but lightly. But perhaps enough has been given to indicate that Texas has been a most interesting place, is such now; that its inhabitants have rejoiced, suffered, yea, died for it. In return it has given them a home and freedom. Enough has been said to explain why, when a Texan leaves his native state, he does not say "I am from Texas." He says "I AM A TEXAN."

# WHERE THE TALL PINES TOWER

In East Texas are the principal forests of the state and pine is the most valuable timber. This forest near Lufkin, Angelina County, shows how the trees are "boxed" for turpentine. The resin flows from the cuts in the trunk and is distilled. New methods have been introduced to save the trees from the destruction which follows the old.

Photograph, courtesy Stuart McGregor.



View of Palo Duro Canyon on a tributary of the Red River.

# THE EMPIRE WE CALL TEXAS

## I. WHAT NATURE HAS DONE FOR TEXAS

GEOGRAPHY is much more than a study of boundaries, surfaces and products, as we shall show you in the following pages. We might, in fact, think of the whole story of Texas as a sort of drama begun long ago and not yet finished. In the play the actors are not only men and women, but also the forces of Nature, sun, wind, rain, elevation, temperature, all of which have had a part in making the earth a fit home for men, and all of which are still important.

The story falls naturally into four parts, which we may give as follows: (1) What Nature has done for Texas. (2) How the physical factors have worked. (3) How these factors influenced the life of man in the past. (4) How man has adjusted and is still adjusting himself to conditions. Many chapters of our book, in fact, are devoted to the details of this fourth part of the story. Now let us see first what Nature has done for Texas.

Texas is in the southern part of the United States, midway between the Atlantic and the Pacific. It is a transition zone where the agricultural and the manufacturing East grades into the mining and the ranching West. It occupies a key position, also, midway between the rest of North America and Latin America. For eight hundred miles it borders Mexico, a situation favorable for international trade.

The state lies wholly in the north intermediate zone, between the tropical zone on one side and the regions of the more northern intermediate zone on the other. Its low latitude, together with its position on the Gulf of Mexico, insures for most of the state a climate that is milder in winter and cooler in summer than a continental interior position could give. With a coast line of nearly four hundred miles, it is the meeting place of many important land routes and sea routes, where work in trans-shipment must be done. While it is relatively far from the ports of northeastern United States and Europe, distance on the ocean is not a factor to hold back trade. Once a ship is loaded it can travel far at relatively little expense. The location of Texas is favorable in many important particulars.

The Texas flag carries a single star,

and the shape of Texas is something like a star, with a western point at El Paso, the southern point at Brownsville, the southeastern point at Port Arthur, the northeastern point near Texarkana, and the northern point represented by the Panhandle. These narrow extensions from the central mass give a wider range of latitude and of longitude than if the shape were more compact.

The political boundaries of Texas are traced partly by water, the Sabine, Red, Rio Grande rivers and the Gulf of Mexico; partly by meridians, the ninety-fourth, the one hundredth, the one hundred, third; and partly by parallels of latitude, the parallel of thirty-two degrees and that of thirty-six and a half degrees. Texas extends over thirteen degrees of west longitude, and over ten and a half degrees of north latitude. The longitude extent gives a difference of nearly two hours in time, although the entire state is in the Central Time belt. The latitude extent, together with the influence of surface features and of location, give to the state a remarkable variety in climate.

### TEXAS IS TRULY THE EMPIRE STATE

It is the largest state among the forty-eight, with California second. It has a range of 740 miles from east to west and 825 miles from north to south. It is farther in a straight line from Texarkana to El Paso than to Chicago or Atlanta. From the extreme northwestern corner of the state the distance to Brownsville is less than to Bismarck, North Dakota. The state is larger by 53,000 square miles than France, and larger by 83,000 square miles than Germany. Its farm area alone is just about the size of Germany. The total area is 265,896 square miles. This is about as much as the combined areas of twelve of the eastern and north central states: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Pennsylvania, Ohio and Illinois. It is even more impressive to consider certain divisions of the state with reference to other well known areas having somewhat similar features.

### TEXAS IS REALLY SEVERAL STATES IN ONE

In her pine timber regions Texas has an area as large as Indiana. The subtropical coast country with elevations less than 150 feet, is as large as South Carolina. The central and middle-west farming regions, with altitudes ranging from 200 to 2,500 feet, has an area as large as Ohio and Kentucky together. The Edwards Plateau cattle region has an area equal to Tennessee. The High Plains, seventy per cent of which is cultivable, with elevations from 3,000 to 4,000 feet, is as large as Pennsylvania. The Trans-Pecos Region of mountains and valleys is about the size of West Virginia.

Certainly Texas is an empire state in size. More important, however, is the fact that within the state there is almost limitless variety. This variety is due partly to surface features, for they embrace plains, plateaus and mountains; partly to location, for Texas spans the distance from the Rocky Mountains to the Gulf, and from central United States to Mexico; and partly to long geologic history.

### THE GREAT VARIETY IN CLIMATE

Extending farther south than any other state except Florida, Texas divides honors with Florida and southern California in possibilities of winter gardening and citrus fruit growing. Extending north as far as the southern boundaries of Missouri and Kentucky, it grows corn and winter wheat. Extending into the mountainous West, it has the usual concentration of minerals found in arid, mountainous regions. Reaching into the region of southwest plateaus, it has rich desert soils and farming by irrigation. It has its cotton belt, with at least 23 inches of rainfall and more than 200 frostless days.

With all its variety in climate, there is no such thing in Texas as being frost-bound or snow-bound for long periods of time. The southern latitude insures year-round activities.

### THE VARIETY IN SOILS, WHICH MAY BE FOUND

In the only state that has had crop values to exceed a billion dollars, soil is the greatest natural resource. In Texas there are three classes of especially fertile soil:

In the Trans-Pecos region there are desert soils, among the richest in the world, for such soils are well mixed by winds and are not leached by rains. Water for irrigation is available from the Rio Grande River near El Paso, from the

Asia was the original home of alfalfa, a plant of the clover family. The Spaniards brought it to Mexico before 1600 and it is now the most popular forage plant. This field is near San Angelo.

This field in Jefferson County shows the rice growing out of the water. When the grains begin to take form, the water will be drained off. This county is a large producer of this grain.

Some of the counties of the Coastal Plain also grow great quantities of the sorghums. This beautiful field in Nueces County, near Robstown, shows what an abundance of forage a field may yield.

Milo maize is one of the grain sorghums, and though it does not grow tall, the yield of seed is particularly abundant. This field is in Garza County, a part of which is in the plains region.

Photographs, courtesy Chambers of Commerce, San Angelo, Robstown, and Lubbock, and Farm and Ranch.

Pecos River in the Pecos Valley, and in other smaller sections where streams are fed by springs.

The second class of fertile soils make up the black waxy prairies in a belt of sufficient rain. This belt, extending nearly across the state from the Red River past San Antonio, is made by the disintegration of limestone rock five hundred feet thick, and is rich in humus.

The third class of most fertile soil is found along the large rivers, in what are called second bottoms not subject to overflow. It is genuine flood plain soil, especially fine along the Brazos and the Trinity rivers.

Other less highly fertile soils are suited to certain important crops. The sandy coastal soils, for instance, warm up early in the spring, thus favoring the growing of truck.

Photograph, courtesy Stuart McGregor.

**In the lower Rio Grande Valley there are many canals like this which carry the water which has been pumped from the river to the citrus groves and truck gardens of the Magic Valley.**

### Variety in Water Resources Also Found

After soil, the second greatest natural resource in Texas is artesian water. Two main artesian belts extend across the state parallel with the coast. Two main factors operating together make the supply of water in these belts abundant: one is the series of breaks across the state called Balcones faulting, which gives rise to many underground springs; the other is the postoak belt of Cross Timbers, that holds back the rain so that it slowly sinks into the ground. This ground water, continuing in sandy strata between clays or limestone layers, furnishes abundant water for the lower parts of the state. In the Central High Plains an abundant source of shallow water has been found, and much land is now in cultivation that until recently was not considered arable.

Rivers and rainfall complete the supply of water for Texas. The waters of many rivers are being used for irrigation, either directly or after having been impounded in reservoirs. The rainfall of Texas varies from ten inches in the extreme West to about fifty inches in the southeast. It is more than twenty inches over nearly all the parts of the state having arable land, and that is sufficient for farming.

### Considerable Variety in Forest Resources

For a state that is often considered a prairie state, Texas has a great variety of timber. Besides the mesquite and thorn bush type of the more arid regions, there are six or seven regions of forests: the pine belt which includes long leaf, short leaf, and loblolly; the main hardwood belt; the Eastern and the Western Cross Timbers of postoak; the main cedar glade belt; the Edwards Plateau forest; and the Pacific pines on the western mountains.

At present the long leaf pine is commercially the most valuable tree, but as this supply diminishes, the hardwoods are being more and more used. Reforestation, which has already begun, will probably perpetuate the pine forests of Southeast Texas.

Aside from the pine, the pecan is probably the most valuable of Texas trees, not only for its timber, but for its nuts. The pecan is the state tree, highly ornamental as well as highly useful. It furnishes the best example of commercial tree crop to be found in Texas.

### VARIETY IN MINERAL RESOURCES IS ALSO GREAT

About four-fifths of the total value of Texas minerals comes each year from petroleum. In addition there is a considerable variety of minerals in Texas, most of which are as yet largely unworked, and in many cases unexplored. Two regions have been considered especially rich in minerals: the Central Mineral Region, and the arid mountainous region west of the Pecos River. Doubtless they excel other regions in variety of mineral resources, but being somewhat sparsely settled and rather poorly developed in transportation, they are not to-day the heaviest producers.

Aside from petroleum, commercial minerals in Texas include natural gas, coal and lignite, natural gasoline, carbon black, graphite, asphalt, cement, clay products, fuller's earth, gypsum, stone, helium, quicksilver, sand and gravel, salt, silver and sulphur.

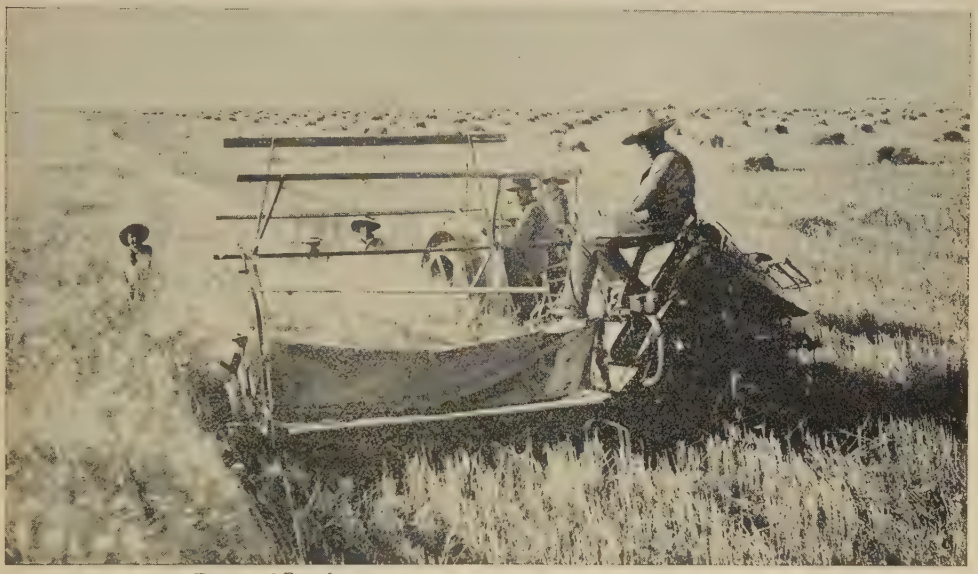
Other minerals of known value await the development of markets. Still others may be found in sections that as yet have not been explored for minerals. Extending as it does from the arid mountain regions into the coastal plains, and including rock masses of every geologic era, Texas has undoubtedly a great variety of mineral resources.

Texas is more truly an empire state in variety of resources than in size. To make the stage and furnish it thus completely Nature needed a very long time. For that part of the story we shall have to turn to the geologic history of the state.

### SOMETHING OF THE GEOLOGIC HISTORY OF TEXAS

Texas was not always so large and so varied as it is to-day. The geologists tell us that in the time called Paleozoic or old life, all of Texas was under the sea except an island now known as the Central Mineral Region, and a few small, scattered islands where now the western mountains stand. The rocks of these regions are like those of the older parts of the Appalachian System. These islands had been formed partly by volcanic intrusions, and as is always the case in such volcanic regions, the soils above the ground are fertile, and the minerals below the surface are fairly abundant.

Toward the end of this old era, the main island mass came up slowly from the sea, and with it came much of the sea floor that had extended fan-shaped north from the Central Mineral Section. In the eastern part of the fan-shaped mass, the land was low and swampy, and came to be covered with dense forests. From this oldest forest of Texas came the coal of the Central Basin,—for that is what the fan-shaped region is called



Photograph, courtesy Farm and Ranch.

**Foard County on the Central Plains region is one of the great wheat producing counties. On this farm near Crowell only tractor power is used. Not all of the county is so level as this great expanse.**

to-day,—and from the teeming life of that time came the petroleum and natural gas. The western part of the basin became hot arid plains in which were formed deposits of salt, gypsum, potash and sulphur. Two of the five geographic units that make up Texas were thus formed in Paleozoic time,—the Central Mineral Region and the Central Basin.

### Limestone is formed from the shells of the sea

In the Mesozoic or middle life era, the lands were elevated, eroded, and again they sank beneath a sea that may have stretched from the Gulf of Mexico to the North Pole. In this sea lived countless millions of shell-bearing animals. In time their shells came to make up limy deposits that quite covered the older rocks of the Central Basin. The deposits extended far beyond the limits of the region, making the foundation for the black soils of the Blacklands of Central Texas and for the section now called Edwards Plateau.

At the end of the Mesozoic Era the mountains of West Texas came up from the sea for the first time, along with the rest of the Rocky Mountain System. This had the effect of lifting also the limy deposits made by the millions of shells in the warm sea. Such a widespread uplift was accompanied, as we should imagine, by considerable disturbance of the rock materials, so much so, that volcanic activity was a feature in West Texas, and there was faulting, or rock breaking and slipping, in a curving belt from the Del Rio section of the Rio Grande to the Red River. Volcanic materials came up through these breaks, and are seen to-day in many places just south of Edwards Plateau. At the end of the Mesozoic Era Texas consisted of the Central Mineral Section, the Central Basin, the rich, black prairies of the coastal plain, Edwards Plateau, and the Western Mountains.

Along the edges of this land mass were marginal swamps, heavily forested. Naturally, the abundant vegetation and the animal life of these swamps provided for later deposits of lignite, petroleum and natural gas. Bog iron was deposited here too. This wide belt, with its stores of iron, lignite, petroleum, natural gas, and other minerals, stretches across the state from Northeast Texas quite to the Rio Grande.

The stage of Texas was completed in the era of recent life, or Cenozoic Era. In the early part of this era, the remainder of the Coastal Plain of Texas was elevated above the sea, together with the remainder of the Gulf Coast, including Florida. The Gulf Coastal Plain is the very newest part of the North American continent.

### The High Plains were once a great lake

A fresh water lake as large as an inland sea lay where now the High Plains are. Later elevation drained away the surface water, but the fine deposits of this old lake bed, together with the abundant water at shallow depths, make this an excellent farming region, a fact only recently realized.

Thus out of the earth mass by volcanic activity, and out of the sea by deposits and later emergences, came the materials that make up Texas. The land has sunk under the sea and risen again, wholly or in part, at least a half dozen times. During every submergence were laid down such deposits as clays, sands, gravels, limy muds, gypsum, sulphur and beds of salt.

In all this long, long time many changes must have taken place in these materials. The very oldest sediments, at first soft like mud or clay, have now hardened into schist or slate. Limy muds have changed into coarse marble, and bog iron has changed into magnetic iron ore. Younger rocks have undergone less change; nevertheless, muds have hardened into shale, lime into limestone, sands into sandstone, and gravels into conglomerate. These changes have increased the wealth and variety of mineral products in Texas.

### Some changes which are still going on

Since no part of the earth is absolutely at rest, and since changes in level are most readily seen at or near the seacoast, one would expect to find evidences of change along the Texas coast line. Such evidences are not wanting. A peninsula in Harris County on which is a slowly disappearing oil derrick, shows plainly that the land at that place is sinking. An inland oyster bed is a still more striking proof of recent emergence. Along the coast many of the river mouths are "drowned," ending in bays, thus proving local sinking, while back a short distance

# DAVIS MOUNTAINS AND THE RIO GRANDE

Five peaks in Texas are higher than any east of the Mississippi. The Rio Grande is 1,600 feet below the man on the bluff.

The students of Sul Ross College at least once a year make a pilgrimage from Alpine to old Ft. Davis, a picture of which we show elsewhere. Alpine itself is nearly a mile above the sea level and Ft. Davis is a little higher. The mountain region of Texas deserves to be better known.

Photographs, courtesy Alpine Chamber of Commerce.

from the sea in other parts of the coast are found raised beaches. Such a fossil beach, thirty feet high, extends quite through the city of Corpus Christi. All along the Gulf coast sandbars are being made, and salt-water lagoons are filling with deposits brought down by rivers.

## II. HOW PHYSICAL FACTORS DID THEIR WORK

We have seen how the physical framework of the Texas we know was built up, and we have seen that the work is still going on. However, the framework is merely the setting of the more important action, which began long ago, even while the stage was being made. The actors were then the factors of the physical environment, and then as now, building and action overlapped.

A whole mountain of marble in Brewster County.

Some of the physical factors were of the rock of the earth, such as faulting, volcanic activity, rising and sinking of the coast line; others were of the atmosphere, such as winds, rainfall, weather changes; still others were of the water, as rivers on the surface and ground-water underneath; and finally there was the activity of the vegetation and animal life. The action of these factors was slow, but they accomplished nevertheless a vast amount of work that has to-day an important influence on man's activities.

### THE ACTION OF THE EARTH MOVEMENTS

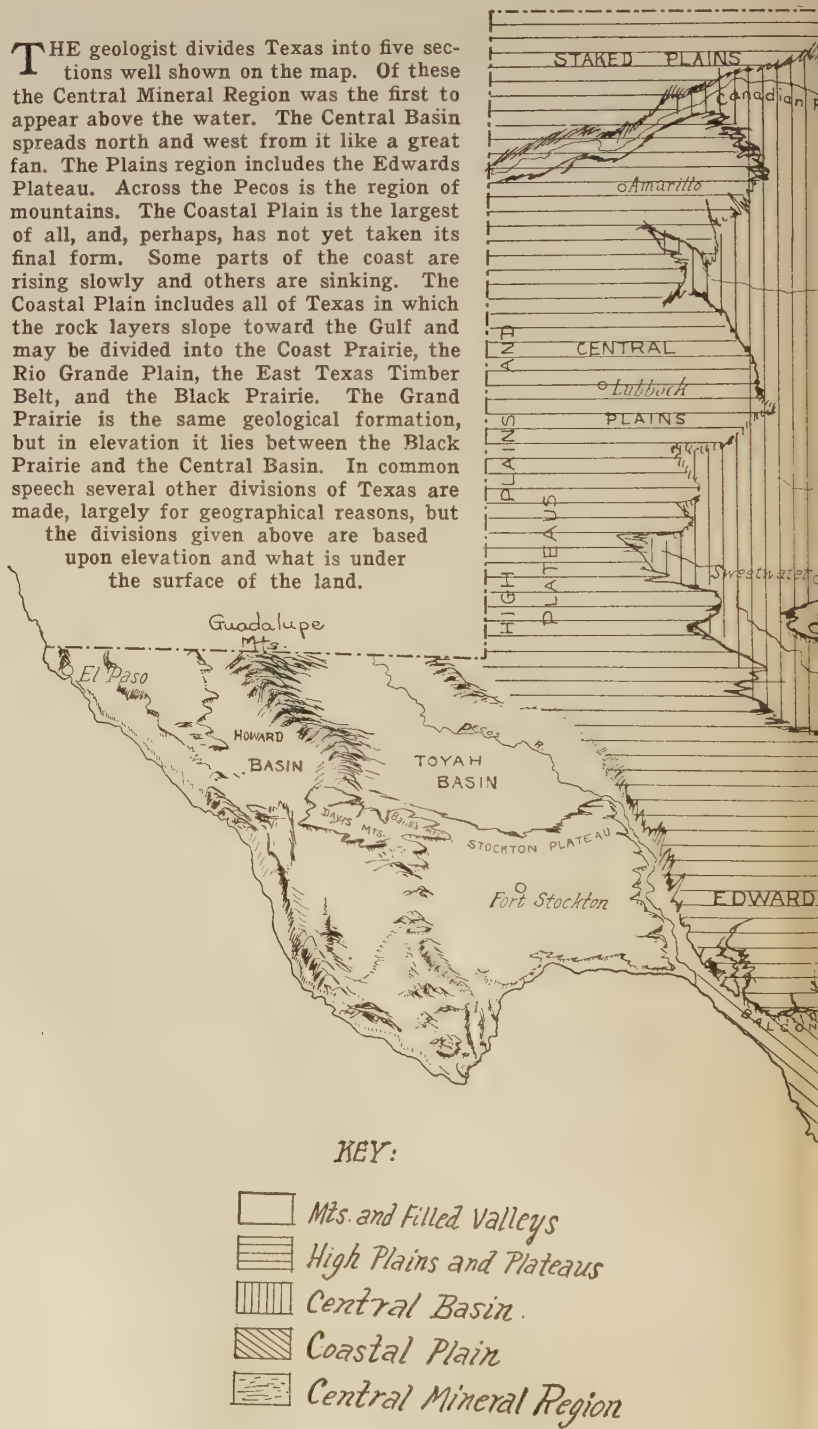
In prehistoric times the rock part of Texas was under greater strain than now, because of the rising of the Rocky Mountains. The strain found relief in breaks on the crust accompanied by slipping; such breaks are called faults. Faulting developed in a belt that extended from the Rio Grande at Del Rio, past San Antonio, in a northeastward direction to the Red River. The evidence can be most plainly seen where the displacement was the greatest, and this is as one travels on the Southern Pacific train or on the Old Spanish Trail from Del Rio toward San Antonio. The displacement is seen extending east and west for one hundred fifty miles as a series of cliffs called the Balcones Escarpment, rising in some places five hundred feet above the Coastal Plain. This was level once. From San Antonio the breaks continue northeastward, but the zone of faulting widens out and disappears.

The movement that started as faulting was continued as volcanic action. Materials oozed up through the breaks, and even cinder cones were formed. Such activity resulted in the natural rock asphalt of the Uvalde section, and the trap rock asphalt near Austin. In addition, strong springs bubbled up from below, giving an abundance of cold water of excellent quality, and giving rise to such rivers as the Nueces, the Guadalupe, the San Antonio, the San Marcos, the Comal. Ground water percolated slowly from the zone of faulting, and has continued, supporting to-day a considerable forest in a semi-arid region south of the Balcones Escarpment, and supplying artesian water in many places for

# STRANGE ROCK FORMATIONS

For thousands of years wind, sun and rain have been working upon the mountains across the Pecos and have left many curious formations, some of which resemble animals or grotesque human beings. For example the rock on the topmost right is called the Kissing Apes. Next to it is a great petrified stump. Photographs, courtesy Alpine Chamber of Commerce, Kissing Apes © 1921 J. C. Thain.

THE geologist divides Texas into five sections well shown on the map. Of these the Central Mineral Region was the first to appear above the water. The Central Basin spreads north and west from it like a great fan. The Plains region includes the Edwards Plateau. Across the Pecos is the region of mountains. The Coastal Plain is the largest of all, and, perhaps, has not yet taken its final form. Some parts of the coast are rising slowly and others are sinking. The Coastal Plain includes all of Texas in which the rock layers slope toward the Gulf and may be divided into the Coast Prairie, the Rio Grande Plain, the East Texas Timber Belt, and the Black Prairie. The Grand Prairie is the same geological formation, but in elevation it lies between the Black Prairie and the Central Basin. In common speech several other divisions of Texas are made, largely for geographical reasons, but the divisions given above are based upon elevation and what is under the surface of the land.



# NATURAL REGIONS
## OF THE
# STATE OF TEXAS

At the bottom of this great canyon in the Big Bend the Rio Grande flows. On one side is Texas, on the other Mexico.

farming. Thus the influence of widespread faulting has continued from Mesozoic times until now. During this interval the coast line has been rising in some parts and sinking in others, like the slow movements of a pendulum.

### THE CONTINUOUS ACTION OF THE ATMOSPHERE

Less striking in the results of their work, but more continuous in their activity were the factors of the atmosphere. Alternate heating by day and cooling by night crumbled the hardest rocks into soils. Winds helped in seed dispersal. Winds brought volcanic ash hundreds of miles from the Wichita Mountains beyond the Red River and deposited it in shallow seas, where it hardened into fuller's earth, now mined in a belt that reaches from the Sabine River almost to the Rio Grande. In the summers Gulf breezes cooled the hot land. In the winters cooler weather alternated with warmer. Doubtless lightning set fire to forests and rains put out the fires in those old days pretty much as now.

### THE ACTION OF THE WATERS IS ALSO CONTINUOUS

Water, like air, is always in motion. Much that fell as rain in early days ran off in rivers, doing a vast amount of work.

The principal rivers then as now were the Canadian, the Red, the Sabine, the Trinity, the Brazos, the Colorado, the Nueces, the Rio Grande and its principal tributary, the Pecos.

The Canadian, now an old river, was busy cutting quite through the hard surface of the High Plains. The Red River was cutting back into this Cap Rock to make the beautiful Palo Duro Canyon. The Brazos and the Colorado were removing the limestone top soil from the Central Basin. The Pecos was acting the stream pirate, stealing the headwaters of the Brazos. The Rio Grande was cutting its way across mountains, to maintain its flow across deserts, and, before crossing the Coastal Plain, to make the marvelous Santa Helena Canyon, with its narrow gorge 1,800 feet deep. All of the rivers were cutting across cuestas of hard rock faster than the land rose, were making flood plains in bottom lands, were forming ox-bow lakes, and were taking to the sea materials for the sandbars along the coast.

### THE GROUND WATER HAS HAD GREAT EFFECTS

The obscure ground water was not so restless as the rivers, but it was busy nevertheless. It was carrying to plant roots their mineral foods in solution. It was dissolving out certain minerals, like gypsum or salt, making surface depressions in West Texas that in wet weather are lakes and that are shown on the map as Alkali Flats. It was dissolving out limestone in Central and in West Texas causing beautiful caverns. Nearer the coast it was storing water in layers of sand in broad artesian belts that parallel the coast. The importance of the work of ground water might easily be overlooked.

### WHAT THE FORESTS HAVE DONE FOR TEXAS

In spite of the fact that trees take root, the forests were not inactive. Generation after generation forests grew in swamps, fell, were buried in muddy ooze, were slowly changed to coal. Slowly but surely other forests spread until they occupied practically every region of sandy soil in the state, keeping such soil from erosion. Nor did their work stop there. Occupying sandy soils, they conserved the rainfall, making possible vast areas of

artesian water, sometimes hundreds of miles from its source. Altogether the forests accomplished a great deal for man's benefit to-day.

Season after season grass and wild flowers did important work,—the lupine or Texas blue bonnet, the Indian pink, the blue fringed gentian, the lovely yellow jasmine, and all the rest. They spread a carpet that further helped to hold the soil from erosion. The conserving of soil and water, the two greatest natural resources of Texas, accomplished by forests and flowers, has proved to be of the utmost service to man.

Fortunately for man, the work of the physical forces is going on to-day. Quietly, unobtrusively, they are continuing their work, with certain restrictions or certain enlargements of their work brought about by the scientific control of man.

### How marine animals have helped to make Texas

Shells and bones from the animal life of the seas were responsible, as we have seen, for the limestone soils, that are more widespread in Texas than any other type. Since soil is the most valuable natural resource in Texas, and since the limestone soils are of the highest fertility, the work of the marine animals has proved to be of the greatest importance to man. These deep and fertile soils make up the blacklands of the central prairies. It is decayed organic matter that gives black color and high fertility.

Though the early animal life was much more varied than the marine life, as the rocks plainly show, its influence on the life of man to-day is very small, and we shall not take time to describe it here.

## III. HOW HISTORY WAS INFLUENCED BY PHYSICAL FACTORS

Another chapter will tell, from the standpoint of history, the stirring story of the state of six flags. Without duplicating those facts, this part will connect historic action with geographic influence, using only some of the outstanding instances in which such connection is plain.

### The first settlements on the coastal plain

Strangely enough, the youngest portion of Texas was the first part to be greatly used by man. Naturally, the earliest French and Spanish settlements were on or near the coast. The one French settlement was at Port Lavaca; the Spanish settlements extended from near the Sabine River to the Nueces River, for a long time a part of the western boundary of Texas. The earliest American settlements were made near rivers in the eastern forested regions and as close to the coast as the Spanish settlements would allow. This settlement on the rivers was necessary because water transportation was the only means of getting supplies, and because the bottom lands provided fertile soils for farming, while the forests gave game, building supplies, and comparative safety from Indian attacks.

Throughout the Coastal Plain the growing season was long, familiar crops could be raised and building materials were available. The western part of the plain, with fewer trees and less rainfall, was nevertheless attractive because of great healthfulness. The nearly level, curving plain favored exploration and settlement. Extending toward the United States on the northeast, and toward Old Mexico on the southwest, it invited trade from both countries.

The other regions of Texas had but little part in early Texas history. Settlers dared not go too far from the coast, for the fiercest Indians occupied the Central Plains. Outside the forest belt prairie fires were feared. The interior sections had hotter summers and colder winters, building materials were not so easily available, and the distance from the coastal source of supplies was too great.

### The struggle for mastery between Indians and whites

The physical situation in Texas afforded support to the Indian, and he could not adjust himself to the white man's encroachment on his hunting grounds. The hunting and fishing stage and the agricultural stage could not occupy the same region. The conflicts that arose continued for about two hundred years.

The bloodiest encounters were not with the primitive coast tribes that lived on the offshore islands, or on the fringe of the mainland, using fish, with berries and nuts for food. Nor were the worst conflicts with the more advanced timber tribes, which remained in one place, had houses, and cultivated crops. The worst encounters were with the Comanches and

the Apaches, plains tribes, strong in number and in physical strength, and exceedingly fierce. Their fierceness came partly from their manner of life, for they followed the wild buffalo as he migrated annually. Accustomed to hard riding and to swift attacks, the plains Indians were the last to be subdued by the white people.

The early Indians did little to subdue the land; they planned no labor for their descendants; they left behind them no mark of that long occupation except in such names as Cherokee, Comanche, Nacogdoches, Pecos, Wichita, Waco, Mexia and Texas. To-day there are but few small groups of Indians in Texas. One is at Ysleta, in El Paso County, the oldest permanent settlement in the state. Another is in Polk County on land given them by General Sam Houston for the state.

### France and Spain claim Texas, and lose it

France claimed Texas as a part of Louisiana, which it touched on the east and north, and because La Salle had established a colony on the coast in 1685. Her claim was given up when Napoleon sold Louisiana to the United States in 1803.

Spain had a stronger claim and held it longer. It rested on the discovery of the New World by Columbus, on the conquest of Mexico by Cortez, the exploration of Cabeza de Vaca, and the taking of the Indian town of Ysleta in 1540 in the name of Spain.

When the ocean was a greater barrier than it is to-day, it was impossible for weak countries to maintain far-away colonies. Through distance and weakness France lost an empire in the New World, and within twenty years after the sale of Louisiana Spain had lost Mexico.

Although pioneer conditions existed in Texas, Mexico was fairly well developed, and her population was relatively large. Only the Nueces River, which was no barrier, lay between Texas and the rest of Mexico. No other country seriously questioned her possession of Texas, yet Mexico could not hold this territory even by force of superior arms. In this situation geography had a leading part.

### Why Mexico could not hold Texas

Although their borders touched, Texas and Mexico were almost as far apart as had been Texas and Spain. More than 100 miles of unoccupied land lay between the Medina-Nueces boundary and the capital of Coahuila, with which Mexican state Texas was joined. It was nearly a thousand miles from Texas settlements to the national capital at Mexico City. Distance, lack of developed transportation lines, and the Latin American's natural slowness to act,—all helped to develop among the early Texans a sturdy independence in managing their own affairs. In addition to distance, further protection was afforded the Texans by a series of rivers flowing across the Coastal Plain parallel to any line of approach from Mexico. Still more important than mere distance or any physical barrier was the difference between the two groups of people. The Americans were of the North European, aggressive type, they had only lately thrown off foreign rule, and they could not long remain subject to any group.

Geography fought for the Texans on April 21, 1836, when General Houston's handful of men won independence for Texas. The heat of the afternoon found the Mexicans lounging and unprepared for Houston's surprise attack. A fringe of forest covered the movements of his advancing men. The flat prairie offered no hindrance. Fleeing, the Mexicans were hemmed in by Vince's Bayou, Buffalo Bayou, San Jacinto River and the marsh. This eighteen-minutes-long battle placed the Texans among the free and independent peoples of the earth.

### The young republic is annexed to the United States

After maintaining the republic for ten years, Texas voluntarily laid aside independence in 1845 to become a part of the United States. This was the only part of continental United States that came in by annexation. This added to United States territory not only what is included in Texas to-day, but about 100,000 square miles belonging to the republic, now part of New Mexico, Colorado, Wyoming, Kansas and Oklahoma. For the United States it was an increase of area comparable to that when the great territory of Louisiana was purchased.

### Texas in relation to the Civil War

The Civil War hurt Texas less perhaps than any other state. It was farthest from the centres of actual fighting, it was

# SOME BEAUTIFUL GARDENS

There are many attractive gardens in El Paso. Here the lawn is studded with shrubbery.

Some tropical flowers and shrubs grow in Galveston, and this garden shows a mass of blossoms.

Some architects have sought to adapt Mexican or Spanish styles to modern uses. Here is a strikingly successful example with the house built around the patio, which may be seen in Dallas.

Photographs, courtesy El Paso Gateway Club, Missouri Pacific R. R., and Dallas Chamber of Commerce

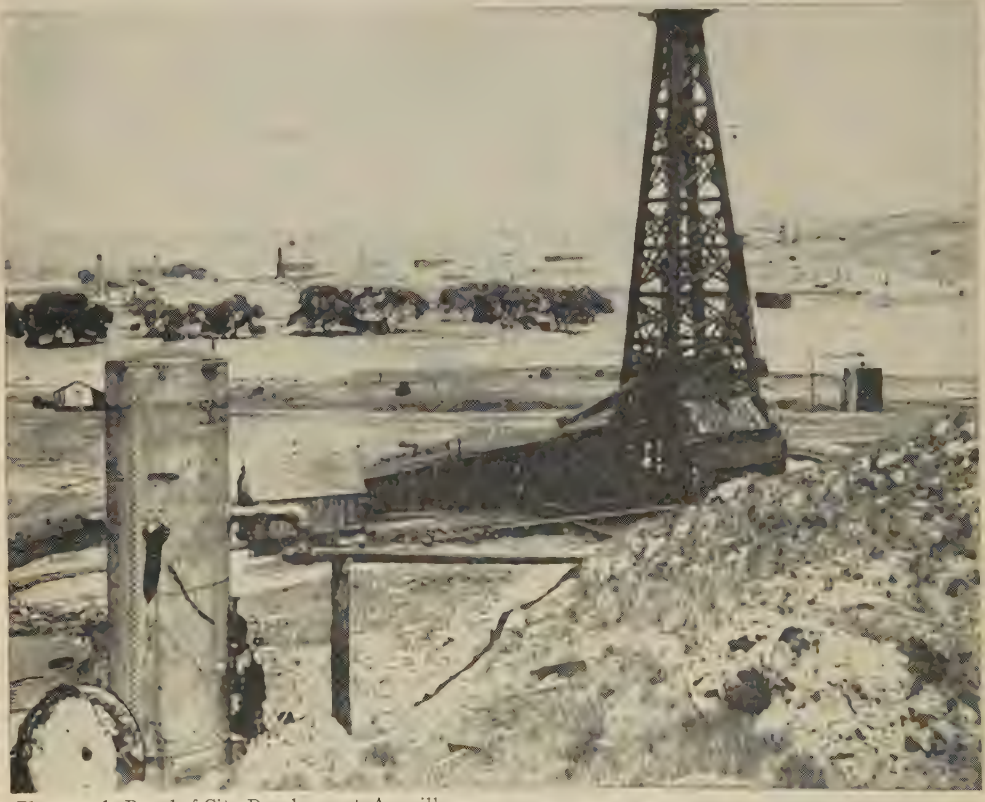
the youngest of the seceding states, and it had relatively few slaves. For that day of poorly developed transportation lines, it was more truly western than southern.

The majority of the people voted for secession because most of them had come from the older states, where states' rights sentiment was strong. Much of Texas is in the cotton belt, the region that found slave labor most profitable. Perhaps the habit of acquiring a new flag every now and then had something to do with the decision,—for the flag of the Confederacy was the sixth flag under which Texas' fortunes had been cast.

Distance from the centres of fighting is still being emphasized by a negro celebration in Texas. The slaves were freed on January 1, but the news did not reach Texas until June 19, hence that date is celebrated by the negroes as their emancipation day. People in Texas could know little of the progress of the war.

### TEXAS IN THE SPANISH-AMERICAN WAR

Texas' part in this war will long be remembered, for the Roosevelt Rough Riders, who contributed no little to the freeing of Cuba, were a picked cavalry regiment made up partly of Texas rangers. Moreover, nearness to Cuba, together with water transportation, made it relatively easy to send soldiers and material supplies.



Photograph, Board of City Development, Amarillo.

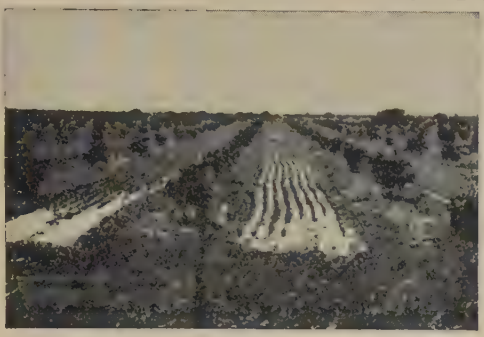
**In almost every part of Texas one can see a sight like this. Note the great oil tanks near the derricks in the distance. This is a field near Amarillo, which has become quite a centre of oil production. Where oil production begins, farming must stop, as oil and crops do not mix to advantage.**

### THE WORLD WAR CALLED ON TEXAS

During the World War there were more training camps in Texas than in any other state in the Union. Army cities had to develop over night, and in Texas there was plenty of room. The nearly level central prairies offered excellent fields for aviation practice.

The principal army cities were on or near the outcrops of white limestone rock, a gently rolling region with an abundance of artesian water and excellent drainage.

# DELICIOUS FRUITS OF MANY KINDS



While grapefruit trees near Laredo are growing, the onions between pay expenses.

These plum trees in Crabtree Orchard, Erath County, are a lovely sight in spring.

The date palm grows from Del Rio to Brownsville. This tree is in Laredo.

The papaya has several varieties. The ones on the left have a hard shell.

Jefferson County produces delicious figs as well as oil. There is a plant for preserving within a mile of this orchard.

This photograph of an orange grove in Jim Wells County was made just before Christmas. The trees were all green and gold.

Lumber for construction was obtained from the East Texas Timber Belt not far away. Fuel was plentiful. Mild winters with a high percentage of sunshiny days favored continuous drilling. Doubtless soldiers from other states, crowded in these hastily built barracks, have unhappy memories of their experiences in Texas, but the fact remains that Texas geography contributed much to the World War situation, in addition to the five per cent of the entire population that enlisted.

We have reviewed some of the influences of physical factors on the history of conflicts that have developed in the state. However, "Peace hath her victories no less renowned than war," and it will be interesting to see how the ordinary activities of man are an adjustment to the physical conditions about him.

## IV. HOW MAN ADJUSTS HIMSELF TO HIS ENVIRONMENT

The two important topics to consider in studying the geography of any region are probably these: What adjustments is man making to physical conditions, and, what further adjustments should he make in the future? Let us try to answer these two questions with reference to Texas. Perhaps this can best be done by considering man's main activities as they are now developed, and as they may be further developed, in each of the five geographic regions into which the state is divided.

### NATURE SHOWED MAN HOW TO MAKE ADJUSTMENTS

In the matter of making adjustments to physical conditions, Nature was the teacher of man. The same vegetation does not flourish on the High Plains and near the Gulf. Nature makes adjustments everywhere. To the extent that man follows Nature, suiting his activities to the conditions he finds about him, he is easily successful in Texas. Nevertheless, man, the master of physical environment, has spent much time and money on projects that have tended to modify this environment the better to suit his purpose. Such modifications include artificial reservoirs, drainage projects, and the cutting of canals. As the present population, now nearly six million, increases, such modifications will become more and more necessary. Now the density is only about 18 per square mile; European densities of hundreds per square mile may some day prevail, and for that time and that condition other adjustments and other modifications shall have to be made.

### THE FIVE GEOGRAPHIC UNITS WHICH MAKE UP TEXAS

Although "nothing stands full finished beneath the spinning sun," the stage of Texas is now complete in its five geographic units. Of these the Central Mineral Region is the oldest and the smallest. Next oldest is the Central Basin, spreading fan-shaped to the north. West of these two regions lie the High Plains and Plateaus, subdivided into two sections: The High Plains, including the Panhandle and the Central Plains, and the plateau section, including Edwards Plateau and the Stockton Plateau across the Pecos River. The fourth unit, Mountains and Filled Valleys, is in the extreme West. The fifth and last of the geographic units is the Coastal Plain, youngest and largest of all. It is subdivided into Coastal Prairie, East Texas Timber Belt, Rio Grande Plain, and the Blacklands.

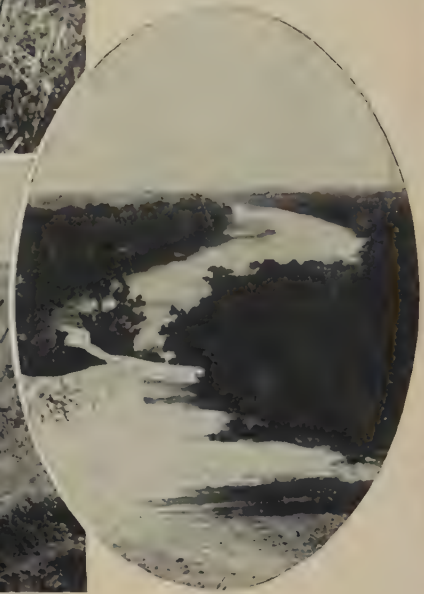
Other divisions of the state are often made. Regional Chambers of Commerce would suggest dividing the state into West Texas, East Texas and South Texas, but with a sad and confusing overlapping of boundaries when it comes to actual practice. The Texas Almanac recognizes still more divisions: West Texas, Southwest Texas, North Central Texas, Central Texas, South Central Texas, East Texas, Lower Coastal Plain. Such divisions are made on the basis of location within the state, or perhaps on the regional preference of the one who would attempt to define the regions. Such attempts must end in confusion for most readers, convenient though the divisions may be for those already familiar with the state.

Each of the five geographic units enumerated above is different, and its industries also differ. In a unit of large size, these industries represent a wide range necessarily, but the correspondence to surface features, geologic structure and natural resources is close enough to make such division reasonable and convincing. Let us summarize the main physical characteristics and the leading industries in the five units, considering also possible future adjustments.

# STREAM AND FIELD IN THE PRAIRIES OF CENTRAL TEXAS

The Bosque River flows into the Brazos at Waco. The oval shows the river itself at the site of a proposed dam to conserve water for Waco. The barley field above, at the right, is in Bosque County.

Cameron Park, Waco, is an unusually interesting tract of land and water. The field below, at the left, shows Hereford cattle near Midlothian, Ellis County.



### WHAT IS THE CENTRAL MINERAL REGION?

This unsubdivided part of the state is the oldest, the smallest, and the most centrally located. It is an old worn-down mountain region, lower than Edwards Plateau that wraps almost around it. It is drained by the Colorado River and its principal tributary, the Llano, which on leaving the plateau has beautiful falls more than a hundred feet high. The boundary of this small section is well defined by the escarpment of the plateau, except for a short distance on the north, where the Central Mineral Region grades into the Central Basin through a rough country, partly eroded by the Colorado River, and called the Callahan Divide.

In this unit, made up largely of igneous materials and limestones, there is a remarkable variety of minerals, including pink, gray and opaline granites of superior quality, marble, limestone, sandstone, graphite, gold, iron ore, copper, clays, lead, silver, and rare earth minerals. It is the characteristic mineral deposits in old mountain rocks that gives it unity as a region.

Photograph, Daniel Studio, Lubbock.

**On the South Plains every house has a windmill which is seldom higher than forty feet. This one at Yellow House Ranch is 120 feet, as it is in a canyon.**

The principal industries are mining, cattle raising, and general farming. With altitudes ranging from 500 to 1,500 feet, and with forests of cedar and hardwoods, it is a sort of miniature Switzerland in the centre of Texas, with wonderful opportunities for resort development, for certain kinds of manufacturing using hydroelectric power, for mineral development, and particularly for general farming and dairying, with tree crops such as pecans. Touching or easily accessible to three of the four other geographic units of Texas, this small region could be the heart of Texas in many important respects. Llano and Burnet are typical towns in the Central Mineral Region.

### THE CENTRAL BASIN IS AN INTERESTING REGION

Like the Central Mineral Region, the Central Basin is lower in altitude than the regions around it. It is separated from the Coastal Plain on the east by low hills of limestone rock, and from the High Plains and Plateaus on the west by their eastern escarpment, the Cap Rock.

With altitudes ranging from 1,000 to 2,500 feet, the region is well drained and healthful. It has an almost continental type of climate, with an average of from 25 to 27 inches of rainfall of the summer rainfall type. Many large artificial lakes are conserving the somewhat scanty supplies of water. Artesian water is often found highly mineralized, fine for medicinal purposes, but not suitable for other uses.

The activities of this region are related to the physical features. Mining is an important industry based on deposits of glass sands and clays; on salt, gypsum and potash of the western part; and on bituminous coal, petroleum and natural gas of the eastern part. A large part of the mid-continent petroleum production of the United States comes from this region. It is a cotton-growing region,

Kimble County on the Edwards Plateau is one of the leading sheep and goat counties of the state. The region is particularly suitable to this industry, though there is considerable farming in some of the valleys.

Hartley County on the High Plains has been given up almost entirely to the livestock industry, though farming and dairying are increasing. Much of the county was granted to the syndicate which built the Capitol at Austin. Some of it is still held in very large tracts. These Jerseys are grazing on buffalo grass.

The Cap Rock divides Dickens County into two parts. Formerly entirely a cattle county, the large ranches are being broken up, and agriculture is rapidly increasing. In the foreground are some of the famous "white-faces" on the Swenson Ranch. The country has a reputation for the quality of its Hereford cattle.

Photographs, top and bottom, courtesy Stuart McGregor; middle, Farm and Ranch.

second only to the rich black lands, besides being a leading section for pecans, oats, grain sorghums and forage crops. Manufacturing is developing rapidly.

To-day the region is definitely changing from ranching to general farming, with cattle as an adjunct instead of the main interest. For such a region, with many possibilities for development not yet started, one can imagine the work of adjustments going on until the Central Basin takes on the appearance of Illinois and Indiana at their best, with a network of transportation lines to take care of such industries as mining, trucking, dairying, diversified farming and diversified manufacturing; with many prosperous rural communities and with a few large and important cities; and with still better water conservation and flood control. Rich in many natural resources, this is already a region of many prosperous small cities. Typical cities are Abilene, Brownwood, Sweetwater and Wichita Falls.

### THE HIGH PLAINS AND THE PLATEAUS

This region lies between lower plains on the east and the mountains on the west, with elevations running from 2,000 to 4,500 feet. The more northern parts are remarkably level, hence the names Llano Estacado, or Staked Plain, and Central Plains. Lately the people of the region around Lubbock are calling it the South Plains. The southern and southwestern parts, though no higher, are more rugged, and therefore deserve their names, Edwards Plateau and Stockton Plateau.

This region is sharply set off from the Central Basin on the east and from Toyah Basin on the southwest by the escarpment of the plains, called the Cap Rock. That part of the Cap Rock that separates Edwards Plateau from the Coastal Plain is called Balcones Escarpment. The region is in general a high tableland.

The climate of the High Plains is stimulating, and naturally the people are energetic. Two handicaps are found in the scantiness of the rainfall, 20 to 25 inches annually, and in the lack of sufficient building material, for this is not a forest country. Because the land is high and nearly level, pressure wells are impossible. However, the steadily blowing west winds pump adequate water from the ground, and in the Central Plains there is an almost inexhaustible supply of shallow water, enough indeed for farming, which is now on an extensive scale.

The main crops are wheat, grain sorghums and cotton. This is the only part of Texas that is free from the boll weevil pest that has so reduced cotton yield in the remainder of the Southern cotton belt. The invasion of the Central Plains by the cotton crop is the most recent development of the cotton industry in the South. Apples and other fruits are grown on favorable slopes where cold-air drainage offers protection. Sudan grass, durum wheat, and grain sorghums illustrate the selection of crops to fit physical conditions.

While the plateau portions of this region are still mainly devoted to ranching, the plains parts are rapidly turning, and with marked success, from ranching to general farming. In addition to farming opportunities there are mining industries highly important,—petroleum and natural gas. There are opportunities for considerable resort development: Palo Duro Canyon, made by the Red River as it cuts back into the Cap Rock, is really beautiful; from Kerrville to Seven Hundred Springs, where the Llano River begins, is a well known resort region combining healthfulness with beauty; Pecos River Canyon touches Edwards Plateau on the west; and Santa Helena Canyon on the Rio Grande River is not far away.

Typical towns are Amarillo on the Staked Plains, Lubbock on the Central Plains, Kerrville on Edwards Plateau, and Fort Stockton on Stockton Plateau.

### MOUNTAINS AND FILLED VALLEYS IN THE WEST

In this part of Texas, a region as large as West Virginia, there are many ranges of mountains: the Guadalupe, Malone, Quitman and Van Horn Mountains in Hudspeth and Culberson Counties; Franklin Mountains in El Paso County; Davis Mountains in Jeff Davis County; and the Chinati and Chisos ranges in Presidio and Brewster Counties. Some of the peaks are nearly 10,000 feet high; five peaks are higher than any peak in the eastern states. They are Guadalupe Peak in Culberson County, 9,500 feet; Baldy Peak in Jeff Davis County, 8,382 feet; Mount Emory in Brewster County, 7,835 feet; Saw Tooth Mountain in Jeff Davis County, 7,748 feet; and Chinati Peak in Presidio County, 7,730 feet. The

# IN THE HEART OF THE DAVIS MOUNTAINS

Nearly a mile above the level of the sea is the Rockaway Orchard in Limpia Canyon near Fort Davis. The orchard is irrigated and produces every year thousands of bushels of juicy apples which bring a good price. The climate here seems peculiarly suitable for the growing of other fruit as well as apples.

Alpine, the county seat of Brewster County, is an attractive town which has grown up among the mountains. It is popular as a summer resort, but in recent years many winter visitors have come to enjoy the climate and the surroundings. Sul Ross State Teachers College is located here.

Photographs, courtesy Mrs. W. B. Hamilton.

elevations generally are from 2,500 to 4,000 feet. The valley floors are flat, filled with the wash from mountain sides when torrential rains develop.

Being arid and mountainous, this is a region rich in minerals. Sulphur is found in Reeves and Culberson Counties. Silver is mined in Presidio County and quicksilver in Brewster County. Besides much fine granite there is copper, lead, tin, mica, borax and many other minerals. Recently the Pecos River region has been a heavy producer of petroleum.

Although this is the region of the lightest annual rainfall in the state, from less than 10 to 20 inches, only, considerable irrigation water for farming is supplied by the Rio Grande River near El Paso and in the Big Bend Country farther down the river, by the Pecos in the Toyah Basin, and by the Comanche and Toyah tributaries which are spring-fed streams. Additional water is obtained from surface wells near the mountains in the loose porous, valley-filled soils.

Except in the irrigated sections, the region has been given over almost entirely to mining and ranching. It could be made a wonderful resort region, for the mountain scenery is more than ordinarily beautiful; the Santa Helena Canyon of the Rio Grande River is accessible from this region; there are prehistoric writings at the Hueco Tanks; Carlsbad Cavern, the largest cavern in this country, extends into the region; there is a prehistoric forest of petrified trees of giant size in the Big Bend Section. It is in this section that the guayule plant is found, from which rubber is made on a commercial scale, and other desert plants have economic possibilities. El Paso is the metropolis of the Trans-Pecos region.

The Southern Pacific crosses the deep canyon of the Pecos River in Val Verde County on a bridge 321 feet above the water. This is said to be the highest bridge in the United States and the second highest in the world. Photograph, J. C. Thain.

### THE COASTAL PLAIN AND ITS DIVISIONS

The Coastal Plain is made up of four subdivisions: the Coast Prairie, East Texas Timber Belt, Rio Grande Plain, and Blacklands. It includes all of Texas that is made up of rock layers sloping toward the Gulf. It extends from the Red River to the Rio Grande River, with its inner boundary touching Edwards Plateau and the Central Basin. It is a region of unconsolidated sands, clays, and limestone soils. It has sufficient rainfall, generally from 20 to 50 inches, with an abundance of artesian water. Most of the rivers of Texas cross the Coastal Plain. Elevations are generally under 500 feet, but they increase to nearly 1,000 in the Grand Prairie, which is a transition zone between the rest of the Coastal Plain and Central Basin.

The subdivisions of the Coastal Plain will be considered separately, because of the size of the entire region.

# THE COASTAL PLAIN SUPPORTS THOUSANDS OF CATTLE

The eastern part of Texas still has many large ranches as well as smaller herds. The upper left is a group of Shorthorns in Lamar County; the upper right shows cattle grazing in the rich grass in Refugio County and the lower picture shows an incident of a round-up on the great Santa Gertrudis, or King Ranch in Kleberg County.

Upper photographs, courtesy Farm and Ranch; lower, King Ranch.

### THE SUBDIVISION KNOWN AS THE COAST PRAIRIE

The Coast Prairie is a genuine subtropic coast, rising from sea level to about one hundred feet, generally level, with naturally poor drainage, and without trees except along the rivers. It extends inland from the coast about thirty to fifty miles, gradually merging into the cotton belt on the north and into the less humid Rio Grande Plain on the southwest. The rainfall is from 25 to 45 inches, with the heavier rain belt in the eastern portion.

Because of excellent natural pasturage and some forest strips, this region is second only to the High Plains and Plateaus as a cattle country. Along the Neches, Trinity, Brazos and Colorado rivers, where water is abundant for flooding the fields, and where there is a watertight subsoil, rice is a major crop. Because of the extreme levelness of the land, big machinery is successfully used. Truck gardens near the cities, and magnolia fig orchards throughout much of the region represent new phases of the agricultural industry.

This is a major petroleum region, and the oil is found in connection with salt domes. Freeport, at the mouth of the Brazos River, is supplying much of the country's sulphur.

The coast cities are popular as summer and as winter resorts. Their great commercial function, however, is to take care of the overseas shipping for the larger inland cities. In this they are helped by the Intercoastal canal, which has a depth of nine feet, and by a 30-foot depth of water at Port Arthur, at Corpus Christi, at Galveston, and from Galveston to Houston, a distance of about 50 miles.

Future adjustment should be along the lines already begun. Commercial cities and resort cities will be more highly developed. With greater city development there should be more dairy farms, hog farms, more growing of vegetables and fruits, not only for immediate use, but for canning and dehydration, more truck farming, more flower farms, more sugar cane and satsuma oranges. All of this is possible and more, for erosion is no problem, the growing season is practically continuous, and machinery can be used to the maximum. Manufacturing is already highly developed in Houston and elsewhere using raw materials near at hand, but raw materials from the ends of the earth could be brought for manufacture with the use of East Texas powdered lignite as fuel.

### THE IMPORTANT EAST TEXAS TIMBER BELT

This region, with an area equal to that of Ohio, is favored not only in the matter of timber resource, but it is blessed also with abundant water, with good soils, and with such minerals as petroleum, natural gas, salt, fuller's earth, and clays, together with iron and lignite in great abundance.

Once it was primarily a lumbering region. The cut overlands later became the principal cotton growing section. Recently this cut over section has become favorably known for trucking, for fruit and vegetables, and general farming. It is now entering upon a manufacturing phase using powdered lignite as fuel to develop electricity. The lignite electric development here is comparing favorably with the hydro-electric development in some of the other Southern states.

The timber is a part of the Southern Pine Forest, and it includes three kinds of pines: the commercially important long leaf pine, which is found in the southeastern part of the state; the loblolly pine, west of the long leaf section; and the short leaf pine, north of the others. There is considerable interest in setting aside as a state park a part of the long leaf pine belt to perpetuate its beauty. The pine forests extend from within thirty miles of the Gulf nearly to the Red River. The westward limit of pines is reached near the Trinity River in the northern part of the timber belt, and the Brazos River in the southern part. From the pine belt to the central black prairies is the main hardwood section of the state. Thus the East Texas Timber Belt is bounded by the Coast Prairie on the south and by the Blacklands on the west.

A reforestation programme is already undertaken, for the forest resource is in serious danger. This programme will be carried out mainly near the coast, where lumber manufacturing industries and shipping facilities are already developed, and where the soils are more favorable for forests than for farming. Because of that development programme, such lumber industries as furniture making, paper making, and related industries should continue to develop in the Beaumont-Orange section.

Reeves County across the Pecos is really a part of the Great Plains, and this crop of alfalfa which has been irrigated by water pumped from shallow wells shows what can be done by industry.

The Winter Garden district gets its water generally from artesian wells. La Salle County every year ships many carloads of onion sets. Here they are growing in the fields, acres and acres of them. It would seem that there are enough of them to furnish the whole United States with onions.

Upper photograph, courtesy Farm and Ranch; lower, Callicotte Farms.

In the northern part of the region the forest probably should give way to fruit and vegetable growing, to dairying, to hog and poultry farms, to cotton manufacturing and to the making of iron and steel. Opportunities for diversified farming are limited only by markets, and diversified manufacture should follow the increase in markets. Typical cities in whose power such development lies are Houston and Beaumont on the coast; and Tyler, Longview and Palestine farther north and west.

The lower Rio Grande Valley raises citrus fruit of excellent quality, and the number of trees planted is constantly increasing. This is an orchard near Brownsville, which shows the close attention paid to it by the owner. Photograph, courtesy Brownsville Chamber of Commerce.

### THE RIO GRANDE PLAIN IS RAPIDLY DEVELOPING

The Rio Grande Plain is in the extreme southern part of the state. It touches the Gulf on the east, extends to the Rio Grande on the west, nearly to Balcones Escarpment on the north, and about to San Antonio River on the east, though on this side the boundary is difficult to set. It is a region of from 15 to 25 inches of rain, with mild winters and hot summers. From the springs of the Balcones fault zone comes a considerable amount of ground water, that furnishes artesian water in many parts of this region. On the delta in the Lower Rio Grande Valley, or "The Magic Valley," as it is fondly called, are extremely fertile soils and an abundance of water, both the gift of the river.

With the development of artesian water, the region as a whole has become important for dairying, for cotton growing, and for ranching, while the great irrigated Magic Valley is one of the major regions in the United States for winter and early spring vegetables, and for citrus fruit. Valley fruit, spinach, lettuce, Bermuda onions, and many other special crops, are widely and favorably known.

The region is capable of still higher development. With more nearly adequate transportation lines, and with deep water at Point Isabel for Brownsville, other industries should develop. All products of Mediterranean lands, such as grapes, lemons, limes, date palms, olives, together with other tree crops could be developed here. Important cities of the Rio Grande Plain are Corpus Christi and Brownsville on the coast, Laredo favorably located for international trade, and Falfurrias the centre of the largest dairying interests of the state. A whole group of smaller towns is growing up in this region.

# GALVESTON'S WONDERFUL BEACH

The sea-wall extends for seven and a half miles along the Gulf and safe behind it thousands of seekers after pleasure pass to and fro. The beach at Galveston affords surf-bathing which cannot be surpassed anywhere in the world. This aerial photograph gives an excellent idea of the long beach.

This picture gives a better idea of the crowds which sometimes frequent the beach. Galveston has become both a summer and a winter resort, and there are few days in the year when bathers do not enjoy the surf. Many conventions meet in Galveston, bringing thousands of visitors from all parts of the Union.

Upper picture, courtesy Galveston Chamber of Commerce, copyright by Verkin; lower, Missouri Pacific R.R.

### THE BLACKLANDS, FAMED FOR THE FERTILITY OF THE SOIL

The Blacklands, so called from the large amount of humus they contain, extend from the Red River in northeast Texas along a wide belt past San Antonio, where the belt narrows to a point. It is the finest body of agricultural land in the state, and is compared in fertility with the Yazoo Basin in Mississippi, the black limestone belt of Alabama and the Mississippi and the Nile Deltas.

The Blacklands consist of two divisions, extending north and south, both treeless except along streams, both lying between forest belts. Black Prairie, the eastern division, is between the East Texas Timber Belt and the Eastern Cross Timbers. Grand Prairie lies between the Eastern Cross Timbers and the Western Cross Timbers. You can see their relative positions on the map on pages 40, 41.

It is hard to determine whether or not Grand Prairie should be counted as a part of the Coastal Plain. From the standpoint of geology it should be, for the rock layers slope toward the Gulf, as do all the other strata of the Coastal Plain. From the standpoint of altitude, it probably should not, for elevations reach 1,000 feet, and the Coastal Plain is generally defined to include elevations of no more than 500 feet. Perhaps the safest practice would be to call Grand Prairie a transition region between the Coastal Plain and the Central Basin.

Black Prairie makes up the inner lowland of the Coastal Plain. From Maryland to Mexico this inner border is a region of high development in agriculture as well as in manufacture. It has the greatest density of rural population and the greatest concentration of cities. In Texas the influence of the White Rock Cuesta, or ridge, in locating cities is quite remarkable. It can be seen along the skyline from Denison to San Antonio, and on or near this rock foundation the important cities of the state are located, with the exception of the coast cities and those of the high plains.

Every year the Texas Cotton Palace Exposition is held in Waco. We show here a part of the grounds and some of the buildings which are situated within the city of Waco. A race track and an athletic field are included.

© Gildersleeve.

This is a farming region with many crops, but cotton is the money crop, with livestock an important industry. Ellis County produces more cotton than any other county in the United States. Because of the high fertility of the soil, the percentage of tenancy is unfortunately high. Mineral resources are important even in this superior farming region. In some places there is heavy production of petroleum and natural gas, especially along the Balcones fault zone which extends through Black Prairie. There are also clays, fuller's earth, limestone for portland cement, and an abundance of artesian water. Of the many natural resources of this region the greatest is

fertile soil. Hardly less important, and more to man's credit for developing it, is the vast supply of artesian water.

In speaking of the artesian water a recent writer has said: "The outstanding fact in the development of Texas in the last 35 years is not the development of her mineral resources, fabulously great as they are. It is the development of her priceless artesian water. It is the supreme triumph of man that he has released himself from merely surface water, and has drilled wells and built cities on the prairies. The artesian supply of Texas has made possible the change from a cattle and ranch country to a densely populated agricultural country. No other single factor has had so much effect in the growth of its citizenship, and in adding to the total well-being of the state as has its artesian water supply."

Already this region leads in farming and in manufacturing. Its future adjustments will probably be along the lines already begun. As cities continue to develop, such industries as dairying, poultry and hog raising, and truck farming should increase in importance, and tenancy should decline. Manufacturing of agricultural machinery and of cotton goods should have the highest development.

Among the many important cities of this gifted region are Dallas and Fort Worth in North Texas, Waco in Central Texas, Austin, the capital, and San Antonio, according to the 1920 census the largest city of the state.

### WHAT CITY IS TO LEAD IN TEXAS?

As adjustments continue, the state will develop, and the largest cities will foster that development and profit by it. What city will lead in this development and be most profited by it?

For a long time San Antonio has been counted the largest city in Texas. It is the oldest of the principal cities. It is historic, beautiful, healthful. It serves a large and rapidly developing area. It is a funnel for Mexican trade. It is Southern Army Headquarters. Its back country is rich in natural resources. It catches the trade from the agricultural east and the ranching west. Its situation is something like that of Atlanta, Georgia,—a focus of routes from many directions.

Dallas is in the heart of the fertile Blacklands. It is surrounded by the greatest density of rural population in the state, the greatest concentration of small towns, the greatest industrial development, and the best development of transportation. It is nearer the other large cities of the United States than any other major Texas city. Its entire development has been since 1871, within a period of less than sixty years, yet it is already crowding the two older cities, San Antonio and Houston, for first place in size.

Houston, standing at the farthest reach of the sea into the land, is an ocean port of first rank, fifty miles from the coast. It stands almost alone in a relatively unproductive region, yet it taps the resources of the Coast Prairie, the Timber Belt, the Cotton Belt, the grain belt of Central United States, and with its many land routes and its more numerous sea routes, reaches out to the rest of the world for its markets.

Which city is destined to lead the others? One of these, or another? The answer lies in future adjustments made by the six million and more Texas people. The physical stage is set; the play is on; the final applause is yet to be won.

Corpus Christi and its crescent bay seen from the air.

# SOME OF THE MANY BEAUTIFUL HOMES IN TEXAS

These beautiful homes are only a few generations from the log huts of the pioneers. The upper left is in El Paso and the inset in Ft. Worth. The lower pictures show Dallas houses, one after an infrequent snow storm. The upper right is Laguna Gloria in Austin, the home of Mrs. Sevier, who saved the Alamo from destruction.

Four generations picking strawberries in the South Plains.

# THE PEOPLE OF TEXAS

TEXAS is not only larger in area than many independent nations but its population is also greater than that of many nations, well-known in history. Norway, for example, is less than half as large and has about half the population. Ireland is much smaller in area, and has fewer people. Though several of the European nations have a much greater population, the only one with a larger area is Russia. In 1920 the United States Census showed that there were 4,663,228 people living in the state, making it rank fifth of the forty-eight states. This is a larger number than lived in the whole of the United States when Washington was president. In 1928 the Census Bureau estimated the population at 5,487,000 and it is certainly greater now, for Texas is a growing state. Only four states—New York, Pennsylvania, Illinois and Ohio, all east of the Mississippi—have more people within their borders.

Who are these people? Where did they or their ancestors come from? How do they make their living? Are they prosperous? What do they think about various questions? How do they differ from the people of Maine, say? Can we answer these questions and many others?

Some of these questions depend upon the history of the state, and some are matters of opinion, but the census tells many interesting facts if we seek for them. Generally we must use the 1920 figures for the various divisions, as the more recent census estimates are only for the total population. The actual counting of the people takes place every ten years. In the ten years between 1910 and 1920 we find that the population increased more than three-quarters of a million, or 19.7 per cent. The United States as a whole showed an increase of 14.9 per cent. So Texas is evidently growing faster than many states, and at least fourteen states of the Union did not have as many people living in them in 1920 as Texas had added to its population in ten years.

More than five-sixths of the population was white, 3,918,165 whites to 741,695 negroes in 1920, and the white population is increasing faster than the colored. The white population had increased twenty per cent in

a period of ten years, while the negro population had increased only seven and a half per cent. There were also 2,109 Indians, 773 Chinese, 449 Japanese, 30 Filipinos, 4 Hindus and 4 Koreans in the state. These numbers are too small to have much influence on the life of the state.

Put in another way, the census says that in 1920, of every 1,000 Texans, 840 were white, 159 were negro, and one belonged to one of the other colored races mentioned above. This is not quite true, however, for the census classes all Mexicans as white, though many of them show evidence of Indian or negro blood. Probably if they had all been born in Texas many would have been reported as Indian or negro instead of white.

### Where were the people of Texas born?

Most of the people who now live in the state were born in the state, or at least in the United States. The number of foreign-born was only 363,862, in 1920, about one-thirteenth of the whole population. These people had come from many lands, but by far the largest number came from Mexico (249,652), about seven out of every ten of the foreign-born. Probably this figure should be larger now, for many Mexicans have come into Texas since 1920. Germany furnished the next largest number (31,062), and Czecho-Slovakia was next with 12,819; Italy was third with 8,024 followed by England with 7,685, Russia with 7,057, Austria with 6,441, and Poland with 5,047. No other country had sent as many as five thousand, though Canada, Ireland and Sweden each had sent almost that number. There were also 445,384 born in the United States, but with one or both parents foreign-born. However, it is clear that by far the largest class of the people of Texas is "native-born whites of native parents."

The Mexicans live for the most part along the line of the Rio Grande, not so very far from the Great River. San Antonio is the greatest centre, but Mexicans may be found all through the western part of the state and are gradually making their way into every section. Those of German or Austrian birth or descent live chiefly in the triangle formed by Waco, Houston and San Antonio. The Czechs and the Poles live chiefly in Fayette and Lavaca counties. The other foreign-born live for the most part in the cities and towns throughout the state.

Though the number of Mexicans living in Texas in 1920 is given as 249,652, the number of Mexican or Spanish blood was considerably larger, over 400,000. The same is true of the German population. There were considerable German settlements in Texas before the Civil War, and as they settled in communities rather than by families, the German language and German customs continued to exist. The number of German blood is given as 159,219. The great increase in the number of Mexicans is due to the recent laws which lessen the immigration from Europe. These laws do not apply to this continent and so many Mexicans have come in to work. Then, too, the Mexican frontier is so long, and the Rio Grande is so easy to cross that it would be very difficult to keep them out. The increase in number is bringing some serious educational and social problems.

### Natives of other states move to Texas

Thirty or forty years ago the proportion of Texans who had been born in other states of the Union was very large, but now about seven out of every ten of the native-born were born in the state. Still, nearly a million people (968,382), living in Texas in 1920, were born in some other state of the Union. We find that more have come from Tennessee and Alabama than from any other states, over 100,000 from each. Louisiana is next, Arkansas next, and Mississippi had sent over 80,000. Just as people have come to Texas from every state, so natives of Texas live everywhere. Somehow 84 had found their way to New Hampshire, and 100 lived in Delaware. The greatest number of Texans who had left the state of their birth, 236,638, lived in Oklahoma, which was opened to settlement not so long ago, and 49,185 lived in California. In all there were 408,830 Texans living elsewhere, but even so, you see that the state had gained over half a million by the exchange.

One usually takes it for granted that the number of men and women in any community is about equal. It is not so in Texas. In 1920 there were in that part of the population over 21 years old, over 138,000 more men than women living in the state. So it is evident that

# MEXICANS IN THE BIG BEND

The Big Bend country is thinly settled, and some of it is still wild. The Mexican population furnishes much local color. Here are Mexicans and their patient burros which carry almost unbelievable burdens.

United States soldiers are here holding up Mexicans attempting to cross the border and are searching for contraband. Quite likely such articles will be found and the would-be smugglers sent back.

Many Mexicans live in hastily constructed shacks often of adobe, that is, sun-dried bricks. Sanitary conditions often leave much to be desired. On the right is a Mexican hunter in the land of yuccas.

Photograph, lower right © Carl D. Newton; others, courtesy Alpine Chamber of Commerce.

all of the men could not marry, if they wished. Some of this difference is due to the fact that many Mexicans have come to the state to work without bringing their families, but there are nearly 82,000 more native-born men than women. Counting children, there are nearly 107 males for every 100 females. This difference is almost entirely among the whites. The number of males and females among the negroes is almost the same. This difference is often present in a country not fully developed. For example, in Nevada, there are 148 males to 100 females. In some of the older states, as Massachusetts and Rhode Island, there are fewer males than females.

### Most Texans live in the country or in small villages

Farming, with which is included ranching, is the greatest single industry in Texas and more than half of the people lived in the country or in small villages. Only 324 out of every thousand lived in towns of more than 2,500 people. In the United States as a whole, more than half live in towns. Even these figures show a great growth of town population in Texas. In 1900 only 171 persons in a thousand lived in towns. Texas is just about half as thickly settled as the average for the United States, about 17 persons to the square mile compared with 35. This means that there is plenty of room yet in the state. If the state were as thickly settled as the average for the United States, the population would be over nine millions. There is no reason why this should not happen within a few years. Texas has much land now in pasture which can grow crops and manufacturing is increasing every year.

The population of Texas is not at all evenly distributed. As might be expected, the greater part lives in the eastern third of the state, where most of the larger cities are to be found. Dallas County was most thickly populated (245 to the square mile in 1920), with Tarrant, which includes Fort Worth, second (169), and Bexar, which includes San Antonio, third with 160. Other thickly populated counties were Galveston (134.6), Wichita (120.7), Harris (112.9) and El Paso (110.4). On the other hand there were several counties, chiefly in the far west and northwest, with less than one person to the square mile. These are counties given over chiefly to grazing, with little farming and no manufacturing. There were twenty counties in 1920 with less than one thousand population. Oil has recently been found in some of these, and West Texas and the Panhandle are increasing very rapidly in population. Towns and cities are springing up on what have been remote ranches.

### How the people make their livings

The manner and the place in which people make their livings have much to do with what they think and feel about many questions. The cowboy and the banker do not lead the same kind of lives and are not likely to agree upon all subjects. The farmer and the merchant often differ in their beliefs and actions. Now let us see how the people of Texas earn their daily bread.

The census reports the number of those "gainfully employed." This class is supposed to include those working for themselves or for wages or salaries. It does not include young children, those living on their incomes, people too old to work, students, or women working in their own homes, unless they work for some one outside the home. Though the work of the mother in the home is quite as important as that of the husband and father, she is not reported as "gainfully employed," but her daughter who works as stenographer is so reported.

In 1920 the census reported 1,719,023 persons over ten years of age as gainfully employed in Texas. The following table shows the percentage in each occupation in Texas and in the United States.

| | TEXAS | U. S. |
|---|---|---|
| Farming, live stock-raising and forestry | 46.2% | 26.3% |
| Mining industries | 1.8% | 2.6% |
| Manufacturing and mechanical industries | 15.6% | 30.8% |
| Transportation | 7.2% | 7.4% |
| Trade (retail, wholesale, etc.) | 9.5% | 10.2% |
| Public Service* | 2.7% | 1.9% |
| Professions | 4.4% | 5.2% |
| Domestic and personal service | 7.9% | 8.2% |
| Clerical occupations | 4.7% | 7.4% |

* Does not include all public service; the Census Bureau classes railroad post-office employes under "transportation," and all teachers, judges and justices and certain other wholly or partially Government-employed persons, under "professional."

### Some interesting figures of occupations

As you see, the percentage of those engaged in farming and stock-raising is

# TEXAS PEOPLE IN THEIR HOMES

Not many farms in Texas or anywhere else show residences quite so imposing or so attractive as this home in Walker County, in East Texas. This county offers a varied list of products, vegetable, animal and mineral.

It is difficult to realize that the site of this home on the South Plains near Lubbock was bare range within the memory of people who are still young. Hard work and water have brought the change.

The surroundings of this home in Dimmit County, in the Winter Garden, are more luxuriant than those shown above. These homes represent the better conditions of living in three widely separated sections. Centre photograph, courtesy Lubbock Chamber of Commerce; others, Farm and Ranch.

much greater in Texas than in the United States taken as a whole. The enormous number of 793,840 was reported as engaged in farming, stock-raising and forestry. Of these 443,637 were reported as farmers or ranchmen, and there were 331,603 laborers on farms and ranches. There were 18,000 more engaged as florists, gardeners, beekeepers, or poultrymen, or in lumbering. The total population living on farms was 2,277,773.

Mining (including the oil industry) is smaller than the average, but these percentages given above are probably not correct now, for there has been a great development in oil and sulphur, particularly, since 1920. We shall have to wait until the Census of 1930 for exact figures, however. In 1920 more than two-thirds of those engaged in mining were in the oil industry. Manufacturing employed only a little more than half as many people as the average.

### How we may judge the importance of an industry

In judging the importance of an industry, we may place it according to the value of the product, the value added by manufacturing, or the number of persons engaged. The meaning of these expressions is easy to understand. The "value of product," and the "persons engaged" mean exactly what they say. The "value added by manufacturing" is the difference between the value of the raw material and the value of the finished product, between the value of the raw cotton used, for example, and the value of the yarn or cloth produced. We shall speak of all these in the chapters on manufacturing. In 1920, the largest number of persons was engaged in the preparation of lumber products, with railway shop work next and oil refining next. This last, however, had both the highest value of products and the highest value added by manufacturing.

Nearly 125,000 people were engaged in Transportation. Of these 4,750 were engaged in water transportation, 48,734 in street or road transportation, and the remainder in railroad, express, telegraph, telephone and mail transportation. The percentage was near the average for the United States.

### Some of the many divisions under trade

Trade shows some interesting facts. In all, 162,504 persons were engaged in 1920, and the percentage is not far from that of the nation. There were 3,564 butchers, 8,472 bankers and brokers, 4,231 engaged in drug stores, only 49 in art stores and only 100 in book stores. Seventy-one sold coffee or tea only, while 11,605 worked in grocery stores. There were 1,278 in candy stores, but only 9 bought and sold rags. There were 95 florists, 553 undertakers and 2,691 dealers in livestock, while 216 sold ice and 660 sold jewelry. These are only a few of the different classifications of those under the general head of trade. Of course the figures are no longer accurate. New shops have opened; perhaps some old ones have gone out of business; others have taken on new workers, but changes do not usually occur very rapidly, and the figures are interesting for the purpose of comparison. After the figures for 1930 are published we can see how the state has changed in ten years.

Under the classification of Public Service we find 1,138 policemen, but there were 3,129 guards and watchmen and 1,308 marshals and sheriffs. Office-holders under nation, state, city or county numbered 6,346. These figures include the state officials from the governor down, postmasters and other United States officials, and the county and city officials. They do not, however, include the judges and the teachers, though they are paid by the government. These are classes under Professional Service. There were also 6,514 laborers, paid by some one of the governments under which all of us live.

### Professional and personal service, and clerical occupations

Under Professional Service we find figures equally interesting. There were 1,657 actors, 495 architects and 477 artists. Authors and editors numbered 1,184 and there were 6,327 clergymen and 1,274 college instructors. The number of lawyers and judges was 5,323, and there were almost as many musicians, 4,111. Teachers outside of college numbered 32,163 in 1920, but there are certainly over 40,000 now. There were 6,093 physicians and 3,387 trained nurses We found only 450 veterinary surgeons. As there are twice as many cattle and horses as people in Texas, it would seem that they are healthier than the people.

When we come to Personal Service we find over ten thousand barbers and hair-

The United States has several thousand miles of coastline and along the whole length, bathing in the surf is a favorite amusement. It is probably safe to say that nowhere is there more enjoyable bathing than along the splendid sea-wall at Galveston. There are few days in the year when there are not visitors.

The beach at Corpus Christi is exceedingly safe, and is much enjoyed by children, who never lose an opportunity of paddling about and soon learn to swim like ducks. The water is deliciously soft and is never unpleasantly cold.

Photographs, courtesy Missouri Pacific R.R.

# "WHEN WE WERE VERY YOUNG"

If Mary should go to Grand Prairie, Dallas County, she could find plenty of lambs. Children generally like lambs, and this youngster is no exception. He lives somewhere in Texas and may recognize his picture.

This Swisher County girl is not Mary, even if she is followed by the lamb. The task of tending the sheep does not seem to disturb the boy, whose address we could not find.

Photographs, courtesy Farm and Ranch.

dressers, 8,473 keepers of hotels and boarding-houses, and 4,195 keepers of restaurants. There were only 49,714 servants reported. Since there are over a million families in Texas it would seem that the great majority of the women do their own housework.

The remaining class of workers, the Clerical, is divided into agents, bookkeepers, clerks, messenger and office boys, and stenographers. In all they numbered 81,865, including 15,614 stenographers and 33,045 clerks in offices and 3,537 office boys.

### Texas people have a rural point of view

All of these figures show us that Texas is, as yet, distinctly a rural state in spite of the number of considerable cities and towns. It is also true that a very large proportion of those who do live in the cities and towns were born in country or village and spent their early years there. The early years of a person's life always leave a deep impression upon him, and one born in the country seldom loses entirely the rural habit of mind. In other words many of the people who actually live in the cities are not entirely "city-minded." All of this means that Texans as a whole are very close to the soil, and think in terms of the country, rather than the city.

Country life has many advantages, but some of the effects are not so desirable. Those who live remote from neighbors are likely to be strong individualists, who are slow to compromise or to co-operate. Sometimes they put the interests of their locality or region above those of the whole. This tendency, together with the great size of the state, has led in the past to much jealousy among the different sections. The people have not always taken broad views and considered the welfare of the state as a whole. Colleges and public institutions have been scattered, when in many cases, fewer, larger and better institutions would have been of more advantage. With the automobile, better roads, telephones, radio, and rural free delivery of mail, some of this localism is breaking down, and more and more the people think of Texas as a whole.

A mistake often made is to think of all farmers as independent land-owners. This is not true in Texas. For years more than half of the farms of Texas have been operated by tenants, and the proportion is increasing. In 1920 it was 53.3 per cent and this had grown to 60.4 per cent in 1925. While many of these tenants are industrious intelligent citizens who are on the way toward land ownership, the condition of many is unsatisfactory. They accumulate little property, move frequently, and their children are likely to lose much of the benefit of the schools. This problem is not confined to Texas, but is also serious in other states.

### Politics and parties since the republic

Texas people have always been interested in politics and elections. For years after annexation, however, the state thought its own problems more important than national affairs and political parties were not organized. Contests were between men and not between parties until 1857, when the successful candidate for governor ran as a Democrat, but he was beaten two years later by Sam Houston, who ran as an independent.

During the Civil War and Reconstruction party names were little used, but in 1873 Richard Coke was elected governor as a Democrat over E. J. Davis, Republican. Since that time the state as a whole has always been Democratic, usually by very large majorities. This has been due in large measure to the memories of Reconstruction and to the presence of the Negro. However, in 1896, the candidate of the People's or Populist party received a large vote. Most of the Populists soon returned to the Democratic party, however, and until more than thirty years afterward there was no strong opposition to the Democratic national ticket. In 1928, however, many Democrats opposed the election of Governor Smith of New York to the presidency, partly because of his opposition to prohibition, and partly, perhaps, because of his religion, with the result that he lost the state. Occasionally a few Republicans are chosen to the Legislature, and the Fourteenth Congressional District has chosen a Republican member since 1920, but in the state as a whole the Democratic nomination has been equivalent to election.

Since 1906 the Democratic candidates for state offices have been chosen by a primary election and more interest is shown in this contest than in the election itself. The Republican party adopted the primary system in 1926. The Socialist

party generally casts a few hundred or a few thousand votes, but does not always nominate candidates for governor and other state offices. Generally speaking the state has not proved to be fertile soil for the growth of minor parties.

### FAR TOO MANY TEXAS PEOPLE ARE ILLITERATE

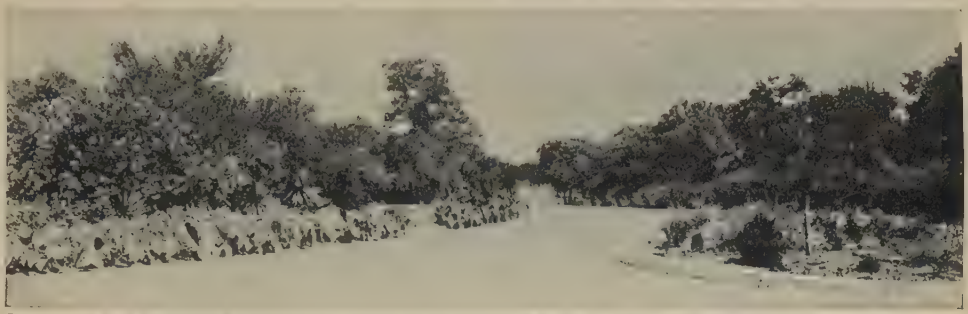
When we come to speak of the intelligence of the people, the first question to be asked is the amount of illiteracy present. The United States Census defines illiteracy as the lack of power to write any language. A foreigner who can write his own language is not called illiterate, even if he does not know a word of English.

Unfortunately Texas has a great many illiterates (295,844 over 10 years of age in 1920), or 83 to every 1,000 persons. This is higher than the average for the whole United States, which was 60 to every 1,000. If we consider only the white population, the situation is somewhat mixed. Among the native whites of native parents, illiterates were fewer than the average, 22 to 1,000 as against 25 to 1,000 in the whole country. Due principally to the fact that many Mexicans cannot write any language, the proportion of foreign-born illiterates was high, 338 to 1,000, compared with an average of 131 to 1,000 in the whole United States. We find also that more than half of the foreign-born white population cannot even speak English. Most foreigners in the United States learn to speak English, and the percentage of those who cannot is only eleven. The high rate in Texas, Arizona and New Mexico is due to the large number of Mexicans, who do not readily learn to speak or to write English. On the other hand, Texas negroes seem to be more literate than the average. The illiterates were 178 to 1,000 compared with 229 to 1,000 in the whole United States.

Then we may say that the native-born in Texas, both white and negro, are more literate than the average. It is the illiteracy of the foreign-born which brings the rank for the state lower than the average. Strong efforts to reduce illiteracy are being made and the percentage is declining. This is shown by the fact that counting only those old enough to vote in 1920, there were 96 illiterates to 1,000 persons instead of 83 to 1,000 when

Here is a group of Texas farmers gathered at Lamesa, Dawson County, on the South Plains, to discuss measures to check the pink boll-worm. It is perhaps a typical gathering of rural Texans. Unfortunately the hats shade the faces so much that some of the effect is lost. Photograph, courtesy Dallas News.

# THE PLAYGROUNDS OF ONE CITY



**Ft. Worth has realized that bricks and stone alone do not make a city, but that provisions must be made for recreation and for the enjoyment of the beauties of Nature.**

**The West Fork and the Clear Fork of the Trinity River come together within the city, and the wooded banks of the river are a favorite resort in the summer time.**

**Ft. Worth has more than thirty parks with many miles of beautiful drives. Some fine specimens of many varieties of trees are seen here. Several species can be recognized in the picture if you look carefully.**

Photographs by Jernigan, courtesy Association of Commerce.

we count the whole population over ten years old. Evidently the children are learning to read and write.

### Libraries and Reading in the State

Not all the people in Texas who can read do read very much. Many families have few books, and subscribe for no newspapers or magazines. On the other hand, many people read a great deal. There are some large public and semi-public libraries, and the number of public schools with libraries is steadily growing. Though Texans can hardly be called a book-buying people as shown by the fact that only 100 persons were employed in book stores, there are some fine private libraries. The Texas Almanac reports that 879 publications are issued regularly. There are 106 daily newspapers, 28 which appear twice or three times a week, and 662 weeklies. The remainder appear less frequently. Some of the dailies are nationally known, and some of the magazines reflect credit upon the state. Newspapers and magazines published elsewhere come to the state in considerable numbers though the proportion of subscribers to population is not so high as in some other states. Not many books are published in Texas, though there are several publishing houses which issue works of merit.

Texans are writing more books than formerly as you may learn in another chapter. Some Texas authors are well known, and a man or a woman who has written a book is no longer a rarity. Unfortunately when an author succeeds, he often moves to New York or some other publishing centre. As a result of this fact there are few professional writers in the state (if we except the editors), though there are dozens of people who have written one or more important books. Some scholarly works by college or university professors have attracted wide attention.

The artistic development in Texas is astonishing when one considers the age of the state. Usually interest in art belongs to an old civilization, but Texas is making giant strides in this particular, as you are told in another chapter. Interest in music is also encouraging and excellent instruction may be had without leaving the state. Some professional musicians of note call Texas their home, and there are many talented amateurs.

### The Frontier Has Given Way to Civilization

Just after the war between the states, when Texas was a frontier and many reckless young men demoralized by the war were flocking to Texas, the state had rather a bad reputation for law and order. Many of the new towns were "wide-open" and outside of the more thickly settled portions men paid little attention to the law. Increase of population, the establishment of permanent homes with churches and schools near by, and the Texas Rangers all had a part in correcting this condition. The "bad man" was tamed or killed, and the lawless towns of fifty years ago are quiet now,—even a little dull.

A large proportion of Texans are church members. There are dozens of religious denominations, some of which have only a few dozen or a few hundred members, but the great mass of church members is Baptist, Methodist or Catholic. These three include about four-fifths of all church members. Other denominations with a considerable membership are the Churches of Christ, the Disciples of Christ, the various Presbyterian and Lutheran bodies and the Protestant Episcopal.

Texas people are great "joiners." In addition to the churches and church societies, thousands, perhaps hundreds of thousands, belong to one or more clubs, fraternal orders or societies organized for various purposes, professional, patriotic or cultural. We tell more of some of them elsewhere.

These clubs and societies are by no means confined to men. Many of them are composed partly or wholly of women, and none in the whole long list is more important than the units which make up the Texas Federation of Women's Clubs. They deserve a whole chapter.

### Is Texas a Western or a Southern State?

Texans are sometimes called Southerners, sometimes Westerners. It is rather difficult to say which, if either, is correct. The state stretches far to the South and West, but many of the inhabitants come from the North and East. Perhaps it would be correct to say that the people are neither Southerners nor Westerners, but Texans, since they show some of the characteristics of both West and South, and some which belong to neither.

The last of the longhorns.

# THE TEXAS STEER: PAST AND PRESENT

THE wild cattle of the plains were Spanish cattle allowed to stray by the invaders. Courageous and strong because of their bull-fighting ancestry, scanty food and lack of care changed them after generations of running wild to the lean, swift longhorns of the trail days. They were well able to travel miles to water and to defend themselves against the attacks of wolves. The Mexicans left the herds to multiply, save as they rode out to lasso a steer for the meat or leather they required. Those that were herded at the missions were later abandoned. These became crossed with the scrub stock brought by the first American settlers, and so plentiful did the herds become that cattle might be had for the taking.

In the old days, however, there was little market for them. Before the Civil War Texas established small cattle markets at Goliad, Victoria, Fulton and Indianola, and shipped a few steers to New Orleans. Though a few enterprising Texans drove longhorns to the corn lands of Illinois as early as 1857, it was not till 1867, when the red men were permanently settled and the Government needed beef for its wards, that the long trail from the Gulf to Abilene, Kansas, was brought into being.

The cowboy whose work those cattle drives created is the heroic figure of the empire builder, and the cattle boom that followed his first successful marketing of beef "on the hoof" was the industry above all others that stamped Texas in the early days. The trail driving lasted but three decades or less. With the coming of the railroads from the East and North, the long months of toil were no longer necessary or profitable. With the fencing in of pasture lands which began on a large scale about 1880, heavier breeds were introduced, but the old cattle days have left as their stamp on Texan ideals and institutions the essence of all things courageous.

The free range of the old days stretched from the Rio Grande to Indian Territory, and various trails were followed. In 1869 several herds were driven to Nevada to stock the ranges of the western territories; one trail, called the Pecos Trail, followed the river for which it was named into Colorado, and was used for driving stock cattle into that territory. Some stock was driven west to New Mexico

by a route opened by the California '49ers. This route led along the Middle Concho River to its headwaters, where the stock was given its last watering, then, starting in the late evening, a drive would be made over the sixty-five waterless miles across the desert to the Horseheads crossing of the Pecos River. It took three nights and three days, and after the first day the animals would be too thirsty to graze. Charles Goodnight, the first to complete that drive, lost three hundred cattle from thirst and exhaustion, not counting the new-born calves which had to be shot because they could not keep up. But the cattle drives of most importance were those along the Old Chisholm Cow Trail. Jesse Chisholm was a half-breed Cherokee Indian who first chose this way through the wilderness in order to bring Government supplies from Fort Leavenworth, Kansas, to Indian Territory. In order to make a trail that would be passable for his heavy wagons, he drove a band of a hundred wild ponies back and forth several times over the rough ground. The freight wagons in turn left wide wheel ruts across the plains. Cattle driven north from San Antonio were made to strike this beaten way. The Chisholm Trail, winding thus from San Antonio northward into Kansas, was opened in 1867, and for thirty years it was the main highway of the cattle drives. The trail, having crossed the Red River Station, followed first to Abilene, until about 1877, when this town was so thickly settled that there were no large enough bedding grounds left for the cattle. After this, the herds were driven further north to Dodge City, and after 1882, they turned West to Coolidge. The main trail now crossed the Red River at Doan's, and a fork branched at Bolivar and crossed below Gainesville. Gradually, as the fences came to Kansas, the northern lap of the trail swerved to the westward of them. In the extreme Southwest, though, there were no fences.

### THE FIRST TRAIL DRIVING TO THE KANSAS RAILWAY TERMINAL

The steer itself was but a half wild creature, starting life as a woolly little calf that had the instinct of the fawn and the buffalo calf for huddling flat and motionless along the plain when its mother went for water, lest coyotes spy it. Should a friendly cowboy approach the little fellow when its mother was about, she would charge with her murderous horns, or hoofs as quick as a pony's. In the days of the free range, the vast herds drifted south in winter to avoid the cold, and north in summer to find fresh pasturage, all save the cows with calves too young to travel. The free intermingling of the cattle of different owners over hundreds of miles of range of course made branding necessary. There were the plains, teeming with cattle; but as yet no railroad had reached down to them from the north. Certain men of initiative began in a small way to drive the steers to market. These first cattle were sold on the hoof at so much a head, regardless of weight or condition, save that "dobes" or "dogys" (scrubby yearlings) went for a smaller price. Soon the larger ranchmen were hiring cowboys to conduct the cattle drives. The work demanded men of courage and unusual physical hardihood. Young men came in search of excitement and out of door life; ex-soldiers of both armies, who found the return to civilian life too tame, drifted to the frontier.

The first work of the spring was the round-up and the branding of the calves. Later the beef round-up collected those of the herds that were fit to be driven to market. Taking them up the trail by easy stages, on a journey that lasted months, they were delivered to the Kansas cow towns where feed was abundant, and the lean, travel-worn animals could be wintered on a fattening diet, ready to be sold to the slaughter-houses the following spring. When the trail driving was over for the season, the cowboys still had to brand the mavericks or husky, fighting one-, two- or three-year olds who had somehow escaped the branding-iron. Then came the Homeric fun of the rodeo, which survives in the roping and riding contests of to-day. The winter work of the Northern Plains consisted chiefly of driving the cattle to places where the best forage could be found, lassoing and dragging them out of bog-holes, and always, trying to prevent their being stampeded and run off by thieving Indians and "bad men."

In driving the cattle down out of the hills, rounding them up and cutting those of each owner out of the main herd, as well as in roping and branding the calves, outfits drawn from the various ranches co-operated. Then such bellowing of

# RIDING BEFORE THE THUNDERING HERD

This corner of the early Texas room in the Witte Museum in San Antonio shows models of pioneer wagons and of Gutzon Borglum's memorial group to the old trail drivers. Branding irons are also shown and on the pedestal of the group are some famous early brands. We show the memorial group elsewhere.

This painting, "The Stampede," by W. R. Leigh, was first exhibited at the Panama-Pacific Exposition, and was later shown in London, where it attracted much attention. The artist has succeeded marvelously in showing a critical moment in a desperate situation, when the thundering herd, stricken with panic, were going they knew not where.

Pictures, courtesy Witte Museum, and Mr. W. R. Leigh.

alarmed steers, and such yodeling of cowboys, as the dusty plains witnessed! Such songs as were convivially roared by carefree "punchers" around the communal campfire, and such "whoppers" as were told by way of mutual entertainment, while distant coyotes yipped to the moon.

### BRANDING CALVES AND HEADING OFF STAMPEDES

To brand the calves, a man mounted on the wiry cow-pony he had trained to the work, would start his noosed lariat into a hissing circle above his head, swing it over the calf till he could lay the little fellow by the heels, and drag it over the grass to within easy reach of the branding-fire. Quickly a second man, this one on foot, catches the little animal by the ears, turns its head sidewise and sits on it, while a third drags one of its hind legs back, and with his foot shoves the other forward. A fourth man lays the hot branding-iron on the side or hip of the bawling little animal, while the smell of singed hair arises, perhaps in the design (∞) of a "lazy eight." Perhaps some one else nicks the calf's ear with a sharp knife, as a still further mark of ownership; and the tally man with his pencil calls out "Lazy Eight, one calf." The terrified calf bawls, as the noose is thrown off its legs and it rises bewildered, to stand with all four legs braced to steady it, shivers running down its curly red hide. Its mother calls it, mumbling endearments, and starts licking its burn, while the hissing *riata* threatens another youngster. Every owner had his brand, which was known and registered. But unfortunately the Lazy Eight, for one, was a brand that could later be changed, perhaps by adding a bar above and beneath or through it; or if the brand was a star, it could easily be ringed about with a circle to make it a wheel brand. Though changing brands was a serious offense, it was often done by bands of "rustlers."

Photograph © 1927 by Carl D. Newton.

**Captain Kenedy, the founder of La Parra Ranch was associated with Captain King on the Rio Grande and was for a time a partner in Santa Gertrudis before buying La Parra. The two men were lifelong friends. The situation of the house is exquisite and shows the lower Coastal Plain at its best.**

On the trail the cattle, several thousand head of them, might be strung out for a mile or more. While the advance scout rode on ahead to select the best water and feeding ground within a reasonable day's march—eight or ten miles—two of the best cowmen drove the leaders forward along the appointed way, snatching mouthfuls of bunch grass as they went, save as a few would stray or go lame. The other boys—perhaps ten or a dozen, if it was a large outfit, would ride up and down, up and down the side lines, to keep

# HOW SANTA GERTRUDIS GREW

Santa Gertrudis Ranch was established in 1853, by Richard King (shown in inset), then captain and owner of steamboats in the Rio Grande.

When the early ranch house shown above was outgrown this large structure was built which served as home and headquarters for fifty years, and was the scene of open-handed hospitality. It was burned in 1912.

The present ranch house is an enormous structure, built of the best materials and furnished in excellent taste. It is sometimes called the "finest farm house in the world." The ranch itself is larger than the State of Delaware, as may be expected from the fact that it is 18 miles from the gate to the front door.

Photographs, courtesy Mrs. R. J. Kleberg, Sr.

them moving in a channel no more than a few hundred yards wide. The occasional footsore animal would be detailed to the rear with the spare ponies, for the wrangler or cook's assistant to keep an eye upon. Bridges there were none, and the rivers were taken at the ford. Where there were flood waters, it was a case of swimming it, with the boys still "riding herd" as the valiant ponies swam to head off the cattle inclined to stray. Sometimes it took more than one day's urging to persuade the half-wild longhorns into deep water. A very different sort of hazard had to be run where water was scarce, for then, when the parched beasts smelled a water-hole, they raced for it and fairly trampled one another into the bog unless the cowman could head them off and delay them.

### Some longhorns easily alarmed into destructive stampedes

The one terrific menace was ever that of a stampede. That was a fact of which marauding Indians took every advantage. When night came, the animals were tired, and ready to tuck their knees under them and chew their cuds on a grassy bedding ground, and the boys saw to it that they bedded as close packed as might be. But any unusual sight or sound alarmed them. A cougar or a wolf, or a man stealing along without his accustomed mount, the oncoming of a thunder-storm, or a norther, or a prairie fire, or, it is recorded, even the too sudden appearance of a full moon, have startled the timid brutes into a blind unreasoning race in which they might go for miles, usually in the wrong direction, if, indeed, they did not scatter hopelessly and trample all their weaker members to death.

To prevent such catastrophes, the boys used to take turns riding around and around them at night, singing—whatever the words—in the most soothing tones, that the beasts might realize that their protectors were on guard and all was well. You will find some of the old songs in our chapter of Stories and Legends. If an animal did start up in a panic, the trained pony knew, without as much as a touch of his master's heel, that he must ride straight at the cow to head it back, while his rider yelled and fired past the ear of the runaway.

The cows were always uneasy during a thunder-storm. A cowman recognized a danger signal when he felt the wind out of the West and saw black clouds rolling up the sky. At the first shriek of wind, the herd would rise. "Boys, they're *movin'!*" would sound the call for help. With clack of hoofs and rattle of horns, the uneasy cattle would turn tail, muttering throaty misgivings. Zigzag streaks of lightning were apt to be followed, in that vast sweep of prairie, with balls of blue fire that rolled along the ground till they burst. Then would come a sulphurous hot smell, while the electricity glinted off the horns that tossed in the black rain. Now the ponies with their mounts will head off the stampede if they can, or if they cannot, they will ride with it, leaping sure-footedly ahead. But sometimes they are overtaken. One striking instance occurred in 1877, when Charles A. Siringo was caught in the centre of a milling herd of over three thousand longhorns, and to avoid being crushed to death, he crawled from back to back of the animals till he reached the edge of the herd.

### Cowboys were generous, high-spirited and courageous

The work of the cowboy naturally brought out certain qualities in him: for one thing, the virility to endure long hours in the saddle, rain or shine, sink or swim, a bed on the ground, under the open sky, food of the sort that could be carried on the trail and cooked by some negro, Mexican or cowman out of work, who would have chosen any other task, had there been a choice. The life of heading off stampedes and fighting Indians and cattle thieves demanded a physical courage of the highest. The need of honesty in the handling of unbranded cows and horses, the helplessness of a man left horseless on the vast plains, and the distance from courts of law made a quick, primitive justice the order of the day.

The free, open-air life tended toward a healthily humorous slant on hardship, a democracy that knew a man only by what he did, and nicknamed him by the handle that most readily identified him. The life and death needs of a wilderness in which food, shelter and especially water were scarce made hospitality the unwritten law; and finally, the big-handedness of dealing with no form of wealth smaller than the steers that survived the "drive" made for a most happy-go-lucky attitude in the spending of his money.

# SCENES ON THE LA PARRA RANCH, KENEDY COUNTY

The founder of the La Parra, or Kenedy ranch was long a partner of Capt. Richard King of Santa Gertrudis. Here we see a round-up; one of the last longhorns, kept as a curiosity; and a shipping scene. The inset is the vice-president and manager of the great organization.

Photographs by Fox, copyright by Carl D. Newton.

It was a day when a strong man thrown on his own resources became stronger. The weak man went to pieces.

One aspect of cowboy character has been grossly misrepresented. The truth was that, with the establishment of those "wet" Kansas cow towns at the railroad terminals, ruffians and ne'er-do-wells from every state in the Union, gamblers, cut-throats, and their ilk, thronged to them. The cowboy, newly arrived with money to quench the thirst of dusty months on the trail, and spirits rising, after his loneliness and hardship, like a toy balloon loosed from the string, reveled in such displays of his expert horsemanship as riding up the steps into the saloon, and it was matter for boasting if a cow outfit could "take a town" by riding through it (without being caught by the marshal), firing right and left.

One of the sports of the cow-camp was the attempt to ride three-year-old steers. The boys would throw, hog-tie and blindfold the snorting creature, then allow it to rise while they cinched a saddle onto its trembling back. Swiftly then they moved their lassos, held the animal by the nose and horns while the would-be rider mounted, jerked off the blinders and dodged. The steer would hump its back and jump stiff-legged, wild-eyed, bellowing, trying to rid itself of the strange incumbrance, and the saddle designed for a horse easily slid to its hips, which left the buckaroo to hold fast by its horns —if he rode!

### COWMAN'S OUTFIT AND ATTIRE IDEAL FOR HORSEBACK CAMPING

The cowman's outfit was, perforce, such as he could take on a three-months' saddle trip, with no other baggage-car than the plodding "chuck wagon." His was no "white-collar job." He wore a flannel shirt—any color but red—as being the kind best calculated to ward off chill and sunburn alike. To this, a slicker added protection when it rained. His wide brimmed felt sombrero, adopted from the Mexicans, likewise seemed the best choice for all weathers; and if an occasional rattlesnake sought the warmth of his blankets at night, it was found that its handsome skin contained enough natural glue to make it stick as an ornamental hat-band.

The constant need of riding through thorny brush or jostling against long-horned beasts made it necessary to wear leather chaps (*chaparejos*) over the trail-proof overalls. Elkhide gauntlet gloves that would not stiffen when wet were required to protect the hands against the pull of a steer on the end of the hair rope, and high-heeled boots kept the foot from sliding too far through the stirrup under such a strain. These boots had to be of the most enduring make and quality, and if the cowman's saddlery and boot tops were extraordinarily costly and ornamental, consider that this was his only means of bringing art to the life he led. The bandanna served many a purpose. Tied loosely around the neck, it protected from sunburn. Worn across nose and mouth, it strained the dust. It could also be forced into service as towel, napkin, or emergency bandage.

There was reason in every detail of the saddle. The strong wooden stirrup kept the foot from being crushed against lurching cattle, the leather-covered steel pommel was designed to hold the lasso against the drag of an enraged steer, and when the cow-pony cleverly held a steer twice his weight by squatting to his haunches, the high cantle kept the cowman from sliding off. The heavy saddle was made one with the horse by the broad cinches.

### THE ROUTINE OF CATTLE DRIVES ALONG THE TRAIL

For all day work, the rider's knees would have become cramped had he ridden otherwise than by letting his legs hang practically straight. As his day-horse must be allowed to forage, a rawhide hobble for its fore legs was the thing that enabled it to range at will, yet prevented its running away when the time came to catch it in the morning. For the night horse, which might be required at an instant's notice, a picket—in extreme cases tied to the owner's wrist—was customary. Of course the hard-worked ponies were ridden only every second or third day, while the rest of the time they were merely driven along with the spare mounts at the rear. The boys themselves took turns of from two to four hours on night watch. In between, they slept rolled in blanket and slicker with even their boots on, and their hats pulled over their eyes. Nor, having once adjusted their spines to the harsh unevenness of the ground beneath them, did they lose forty winks of their hearty rest till wakened by the cook's impatient dawn call of "Come and *get* it!"

# THE SUCCESSORS OF THE LONGHORNS

There are some large ranches across the Pecos. Here calves are being branded near Alpine.

These cattle are a cross between the Brahma and the breeds common in Texas.

The Brahma cattle are immune to Texas fever and have been introduced for that reason.

This pure-bred Shorthorn cow and her calf are on a sweet clover pasture near Frisco.

The markings of these cattle show that they have Hereford blood even if they are not pure-bred. They are three-year-old steers fed for market at the Lubbock Cotton Oil Mill at Lubbock.

Photographs, courtesy Alpine and Lubbock Chambers of Commerce, Farm and Ranch, King Ranch and Kenedy Ranch.

When fresh meat was required, a young steer was butchered and converted into tough country steaks or barbacued roasts which the boys carved up with their one table tool, the bowie knife; but breakfast —redolent of wood smoke and the clean chill of yellow sunrise—was always a matter of beans, bacon, cornbread, and quarts of steaming black coffee, with or without molasses to alleviate its bitterness. Fresh vegetables there were none, after the onions gave out.

### Big Bend Country Raided by Indians and Border Bandits

American white men began crossing the Pecos after the War with Mexico had fixed the Rio Grande as the international boundary. The Trans-Pecos region had been claimed as a part of New Mexico. A bitter land of alkali and cactus, it could long be described as "about two hundred miles from anywhere." The first comers found the Comanche war trail worn deep by the hooves of cattle stolen from the Mexican ranchers. After the California gold rush of '49, the Southwest opened up rapidly, in part thanks to those who had seen in the roaming herds a wealth easier to acquire than that on the Pacific Coast. With the establishment of Fort Davis in 1854, beef contracts were made to supply the soldiers stationed to guard the settlers of the frontier from hostile Indians.

At Presidio the first cattle ranch was established by John Chisholm when cattle were bought to restock the great *haciendas* in Chihuahua, which had been raided by Indians. The second cattle rancher was a Virginian, the third, a Mexican political refugee with American sympathies. There were early attempts to settle around Comanche Springs; but Apaches, Comanches and Lipans with scalping tomahawks seemed determined to prevent the coming of the white man to their hunting grounds. For twenty years they tried to silence the sunset boom of the adobe Fort crouched so watchfully on the desert. But neither summer drought that cracked the hard baked earth, nor scorching winds and sand storms could dishearten the white conquerors: the cattlemen of the Trans-Pecos region continued to round up their hoofed treasures and deliver them over the rocky billows of the Davis Mountains to such markets as they could reach. By 1859 Fort Stockton had been added to the picket line of civilization. During the Civil War, the cattle were left to the care of the old men and the young boys; but in 1868, twenty-five neighboring cowmen got together a thousand head and spent two months on the trail to Chihuahua.

In 1875 Presidio County was organized, with Fort Davis as the county seat. With over twelve thousand square miles, it formed the largest county in the United States. Rangers came, but Indians still made cattle raids. Cowmen whose fathers had pioneered from east of the Mississippi continued to come in search of elbow room, and the young and adventurous, to seek their fortune. But close on the trail of these honest men followed a very different ilk—fugitives from the justice of the States, tramps and ne'er-do-wells who, like the Indians of the plains and the closely related Mexicans of the border, thought to help themselves to the herds and horses of the cow-camps. The term "rustler," which at first had meant merely a cowboy who rustled for his employer by branding the mavericks, came to signify those who placed their own brands on the cattle belonging to other men, and finally, those outlaw bands who hid in the hills and gullies and drove herds of stolen cattle from Texas into New or Old Mexico to sell, perhaps relaying other stolen herds from these places into Texas.

### Outlaws and Murderers in the Big Bend Country

For years the "bad men" of the border congregated along the Rio Grande, hiding in caves and canyons, all but out of reach of the law. Their leader was known as Billy the Kid. This outlaw and murderer set out to take Chisholm's cattle and his life. There were no railroads and no newspapers. There was no law save as the Rangers protected the Texas border. The cattle baron accordingly hired a band of cowboys to fight in his defense, and for two years there was guerrilla warfare. It has come to be known as the *Lincoln County War*. Men were killed on both sides and stolen cattle relayed across the Rio Grande. The canyons and arroyos provided all but impenetrable fastnesses into which the desperadoes might take refuge. Then came the Red Ride of 1883. The outraged cowmen, assisted by the Rangers, organized against the relay system of thievery, and cleaned up the

# ONE OF THE LARGEST HORSE RANCHES PASSES

In 1927 eight hundred horses from the 7-D and the O H Triangle ranches were rounded up near San Angelo to be driven to Mexico to do farm work there. The coming of the tractor and the motor car and the motor truck have lessened the demand for horses. Photograph, Times Wide World.

border from Brownsville to El Paso. Under Captain Lee Hall, squads of two or four mounted men lined up at short intervals until they made a screen twenty miles long. During an advance that took six weeks, they shot down every desperado they came upon, as they might have a ravening wolf. So much for the cattle of the Big Bend Country. To-day the desert blossoms under irrigation, while the railways and the state highways are carrying its first fruits to the markets of the North.

### Cattle raisers' association and later development of industry

As far back as the seventies, Texas began shipping beef to London. As Chicago grew, the Union Stock Yards provided a steady market for Texas cattle, and packing-houses were established in the state. After the coming of the rails, Alpine became an important shipping point, though until as late as 1896 the ranches around Alpine were constantly raided by outlaws. Across the Red River, in Indian Territory, an organized gang of cattle rustlers had strongholds in the Wichita Mountains until a vigilance committee was formed to clear them out. Nor were the rustlers the only foes of the cattlemen. In the early eighties two hundred lives and cattle beyond number were lost because of a war with the sheepmen. Where sheep have been, not only has the grass been grazed to the roots, but a peculiar odor lingers that causes cattle to refuse to eat. In consequence, the stockmen were continually trying to drive the sheepmen off the range. The sheepmen, claiming an equal right to the free grass country, fought to retain the open range. The ill feeling ceased only with the coming of the fences. Another setback to the stockmen came in 1886, the year of the "great die." The herds had ordinarily increased twenty-five per cent in a year, but in time the range became over-stocked and the animals died by the thousands. For years the whitened bones of the starved beasts lay so thick that men out of work could gather and sell them for a few dollars a ton for fertilizer.

The cattlemen of Northwest Texas seeing the need of co-operation of various kinds, beginning with their fight against the rustlers, got together in 1876 at Graham, and a year later held a convention of five thousand men at Fort Griffin at which they organized the Cattle Raisers' Association. Delegates came from every ranch within five hundred miles. Ranchmen, range bosses and cowboys rode in until the hotels were filled and those who could not obtain beds laid their blankets in rows outside the corral fences.

### Old trail drivers' association and monument at San Antonio

Other organizations of cattlemen include the Texas Livestock Association, and the National Live Stock Shippers' Protective League, in which Texas stockmen have recommended important legislation affecting the cattle and meat packing industry. In 1915 the Old Trail Drivers' Association was organized from the five hundred survivors of the old days of trail driving. Of these, some have become wealthy and influential. One man, who came to Texas at the age of eighteen and entered the cattle industry as a trail hand, by twenty-four had become a ranch owner, and eight years later had fifteen herds of three thousand each to take up the trail. The Association, which has been extending its membership to some of the old trail drivers, has erected a memorial at San Antonio in memory of the days when the Texas cattle industry saved the state from bankruptcy.

### Fencing and winter feeding, branding pen and stock car

The cattle ranches had employed extensive methods; but by the '90's the big companies were fencing, and importing fine sires. At the same time the development of the cottonseed oil industry provided hulls as a good feed for "finishing" cattle. (It is only of late years that crops like the grain sorghums have been grown for stock feed.) The quality of the beef improved accordingly. Until 1905, however, ten million cattle ranged the plains. With the last of the trail driving, packing-houses were established, and the beef-packing industry became a success in Texas. In its good years Fort Worth slaughters around a million head of beef animals. Some of these, however, come from other states. On the other hand, many Texas cattle are shipped alive to packing centres outside of Texas.

The day of the big ranch will not go for many a year. A third of the state is even now devoted chiefly to livestock, though the trend of the times is to intermingle ranching with farming in the west, and in the east to reintroduce some stock-

raising. In the north the big ranch is passing, though there are still some huge ranches in the counties adjoining Amarillo and a few other places in the Panhandle, in the brakes of the Canadian River and its tributaries. Large holdings also remain in the rougher country below the Cap Rock of North Central Texas. Some especially big ranches exist around Graham, Breckenridge and Albany, and west of Mineral Springs. In parts of the west and southwest are reaches of country as vast as the entire state of Michigan in which ranches of from twenty-five thousand to a hundred and fifty thousand acres still exist. Some very skilled ranching is being done around Victoria and along the Coastal Plains between Houston and Corpus Christi, but the real ranch country begins at Kenedy County on the Coast and spreads toward Laredo and San Antonio and the wide expanses of the Edwards Plateau, and on to the middle and upper sections of the valleys of the Pecos and the Rio Grande, and northward. The map on pages 40, 41 will show you the regions.

Cattle are no longer driven any great distances now, but are transported by rail. In 1926, over a thousand cattle were driven from the Hudspeth ranch in Val Verde County to the owner's other ranch in Brewster County, a distance of about six hundred miles. Forty-five days were consumed on the drive and it would probably have been both easier and cheaper to ship by rail. This drive received much publicity and it was freely predicted that it would go down in history as the last considerable drive in the state.

Fences and cultivated fields are everywhere now, and there are too many motor cars to allow any considerable number of cattle to follow the roads, to say nothing of the towns which have sprung up. This drive was an interesting gesture, but as said above, in the future, cattle will be carried by rail, though a few fine animals may be carried by motor truck.

Texas cattlemen as a whole apparently find the Hereford the most satisfactory of all the beef breeds. This is one of the sires that are extending the reputation of the Highland Herefords across the Pecos.

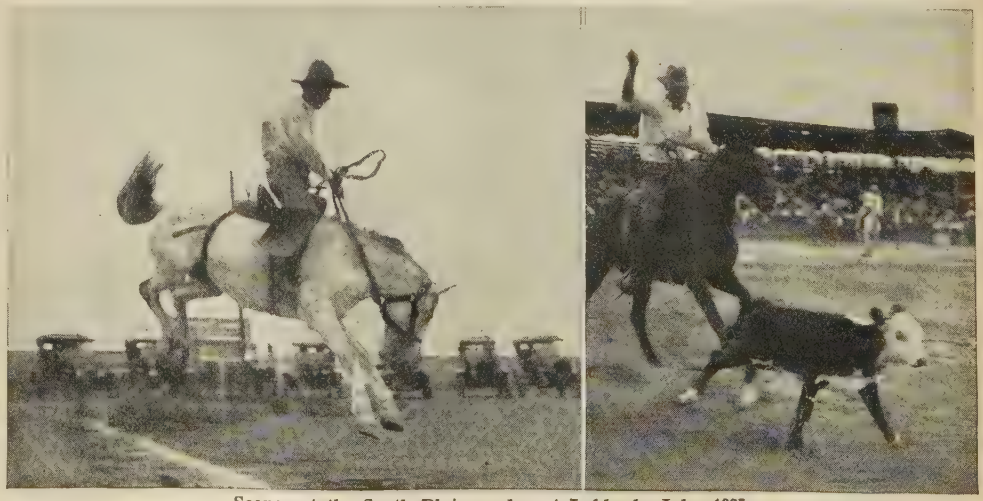
### LARGE RANCHES STILL EXIST, BREEDING EXPERIMENTS BEING CONDUCTED

Pure-bred Herefords are the specialty of a ranch near Stamford, where their feed is prepared by electric grinders and mixers, and where electric fans keep the flies off the tenants of the main barn in summer, while steam heat keeps them dry in winter. The huge neighboring ranch has shipped Herefords to stock farms all

The South Plains, once the home of almost countless cattle, are now becoming an agricultural region.

over the country; but the King ranch of one million, two hundred thousand acres is probably the largest tract owned by one family anywhere in the United States. On this holding there are between one hundred thousand and two hundred thousand beef cattle. On the King ranch, breeding experiments have been made that have resulted in a successful cross between the fever-resisting hump-backed Brahma and the more virile Durham. These cattle are made to swim through a dip that rids them of ticks. This bath is administered perhaps once a week for half a dozen consecutive weeks. It was the father of the present ranch owners who discovered, and called the attention of the authorities to the relationship between ticks and Texas fever.

While the actual number of beef cattle in the state has declined with the cutting of so many of the ranges into farms, the amount of beef has not so declined, nor will it. Texas possesses within her boundaries the largest natural range in the United States, besides which Texas ranches can easily send their herds to graze on the plains of Chihuahua, Mexico. Texas beef played an important part in the winning of the World War. True, owing to drought, seven lean years followed, according to the Institute of American Meat Packers, but Texas still holds the lead in the number of beef cattle produced. To-day many thousands are yearly shipped out of Texas, while but a few hundred cows and calves are brought into the state for restocking purposes. While there is increased competition, the development of salt-freezing and



Scenes at the South Plains rodeo at Lubbock, July, 1925.
Photographs, Daniel Studio, courtesy Lubbock Chamber of Commerce.

One of the last round-ups to be held in the South Plains, near Lubbock.

an extension of the co-operative marketing system is building the industry to even larger proportions. Texas has still between five and six million cattle, valued at well over a hundred million dollars. Of these, only a small part are pure-bred. The rest are grades, crosses between the improved breeds introduced from abroad and native cattle, though the only longhorns are the few to be found in the Trans-Pecos. The two largest packing-houses are those at Fort Worth. Other big ones are located at Dallas, El Paso, Laredo, San Antonio, Waco and Amarillo.

Though every one of the known beef breeds is to be found in Texas in greater or less numbers, Shorthorn (Durham), Aberdeen-Angus, Devon, Galloway and all the rest, the Hereford is by long odds the favorite, as you can see by the pictures shown in the book. One who knows the shape and markings of cattle will perhaps be able to recognize specimens of most of these breeds, but most Texas cattle show more or less Hereford blood. All of these breeds were originally British, though specimens bred in America are quite equal to any found in the original home.

It is a far cry from the old longhorn, tough, sinewy and fleet as a deer, to the ponderous Hereford which may weigh a ton. However, there is a tendency for the ranch-bred Herefords to grow smaller in size, as they are compelled to "rustle for a living." It is common, therefore, for the ranchers to introduce fresh blood into their herds occasionally, sometimes a Shorthorn cross. As the years go on, with the continued use of pure-bred sires, the

Horses and riders from far and near contest for the prizes.

Cowboys on the '06 Ranch across the Pecos.

proportion of longhorn, or native, blood will diminish, but it will be a long time before it disappears entirely.

We have chosen to speak of the dairy industry under agriculture, though some of the dairies are so large that they might well be treated under ranching. You will find interesting pictures of dairy cattle in the chapter which follows. While there are still too few dairy cows in Texas, at least no one can now say that "Texas has more cows and less milk than any other place." Beautiful specimens of all the leading dairy breeds are to be found in the state, though Jerseys are the favorite.

The thud of hoofs, the jingle of bell spurs, the creak of saddle leather no longer sound on the Long Trail. No longer may the boys release their effervescent spirits in Indian war-whoops. Instead we hear the *chuff* of the locomotive and the clank of the long freight train. The days of the free range have become but a memory. The days of the big holdings are nearly over, but the cattle industry helped to make Texas, and has left an indelible impress upon the state and upon its people.

Prize "whitefaces" on a ranch near Brady, McCulloch County, West Texas.

The "chuck-wagon" of the Hudspeth Ranch on the long drive.

Harvesting wheat, Myrick Farms, Lubbock and Hockley Counties.

# FARMING IN TEXAS

TEXAS has enough fertile land within her boundaries to feed a much larger population. Not only does she rank first in crop production, but she raises more cattle and sheep, and has more mules than any other state. Agriculture is by rights the leading industry of a region so rich in variety of soils and climates; and farming is an important interest of bankers and business men, exporters and transportation companies. The United States Agricultural Census for 1925 found the value of the crops raised in Texas to be almost a tenth that of the entire nation.

Texas is the greatest cotton state, raising one-third of the crop of the United States. Besides all this, it grows half the country's total harvest of grain sorghums, it is a fairly important corn state, its wheat and rice are valuable, its citrus fruit is taking rank with that of Florida and California, and its truck farms are shipping enormous quantities of early produce to the winter markets of the East. The timber crop and the fairly recent dairying and poultry raising industries must not be overlooked, and the Texas steer has a chapter to himself. Mules and hogs, sheep and turkeys are still an important item in Texas agriculture; while as for goats, in 1925 Texas was producing three-quarters of the mohair of the nation.

With all that the state is today, and all that she promises for the future, is it not astonishing to realize that scarcely more than a hundred years ago Texas was a wilderness chiefly inhabited by Indians who hunted the buffalo and the wilder mustangs for their meat? The first farming was taught the red men by the Spanish friars. The missions supplied the necessary stock and implements, and the Indian's labor went for a time to the common store, while he drew the food and clothing he required. Then after several years' probation, a field was allotted to him and the mission became surrounded by an agricultural village.

When Austin led the first courageous settlers to the timber lands along the rivers, they raised corn and pumpkins, and planted enough cotton about their cabins to enable the pioneer mothers to spin and weave the clothing of the family. In the earlier days of the state the upland prairies were used as range for the cattle. Later calves were roped and branded, and bronchos

"busted" by lean, drily humorous cattlemen in sheepskin chaps and six-quart sombreros. Until the coming of the railroads, in the middle eighties, long drives were made on which the thundering herds took themselves to market on the hoof. With the coming of the barbed wire fences, many of the large ranches were cut into stock farms, where by winter feeding an even larger number of cattle can be raised on the same amount of land, and the heavy bald-faced Herefords have replaced the wiry longhorn.

Soon after the depression that followed the Civil War, the population of Texas began to be increased by large numbers of immigrants, who changed the system in the Blacklands to crop growing. As many of the original owners of large tracts chose to retain their ownership of the land, merely renting small holdings, the present tenant system arose at that time. The value of the land increased, and farms were cut into smaller and smaller units.

At first Texas grew cotton largely as a surplus product. The average farmer could grow more cotton than he and his family could pick, and that without having any of the improved machinery of to-day. After the Civil War, men who owned land had no money with which to plant crops. Even their livestock had been drawn upon to feed the famished armies. The men with money to lend would allow them to borrow it only on condition that they would raise cotton, the great money crop, and nothing but cotton. It was, after all, the one plant that grew best in almost every part of Texas. In time, it was discovered that it throve even in the west, and the cotton plants have since been marching steadily upon the grazing lands. In these high, semi-arid regions, the Mexican boll-weevil is far less troublesome, and the level nature of the country permits the use of huge sledding machines for gathering the harvest. After the World War, the price of cotton fell so low that the small growers and tenant farmers of the black lands were encouraged by the agricultural experts and other public-spirited people to begin raising their own foodstuffs and trying a little diversified farming—in addition to the "cash crop," for in 1926 Texas still had more acres planted to cotton than all the states east of the Mississippi River combined.

As for other crops, corn has always been a stand-by. The World War, with its urgent call for wheat, so stimulated farming in the Panhandle that, in the five years immediately following, the number of farms in this northern plateau increased 38 per cent, at the same time that the number of farms in the state as a whole increased less than seven per cent. Irrigation had been practised around the old Spanish missions; but it was only about 1900 that the large scale irrigation systems of the Rio Grande Valley were developed.

We have seen that the Texas steer preceded farming. This chapter deals first with the raising of cotton, grain, fruit and vegetables, poultry and farm animals, and with forest products; next with the co-operative marketing of cotton and certain other produce, and finally, with the opportunities for agricultural education. The chapter on Transportation and Commerce will complete the story.

As we have seen in the chapter on the geography of Texas, there is the widest variety of soils and climates. There is an old story that once a man's oxen died of heat. He started to skin them, but work as fast as he would, before he could get their hides off, a norther came and froze their carcasses stiff. The question of rainfall is more important than temperature, however, and rainfall in Texas shows wide variation. Texas has some of the most fertile land in the world, well watered and easy to cultivate. There is land which brings abundant return if water can be brought to it, and there is land with little water, and to which there is little water to be brought.

### Cotton growing in the early days

Cortes saw cotton growing wild in Mexico. Though cotton cloth had been manufactured for the sacred books of ancient India, the plant had been cultivated as a flower in China. Austin's colonists had grown cotton in Tennessee, Arkansas and Louisiana. Coming to Texas in the days before the railroads, they raised enough cotton about their dooryards to supply their own spinning-wheels.

Farming in Texas has passed from the pioneering stage, when the best land was plentiful and relatively cheap, to the well-established system of crop-growing of the

present day, and cotton has become the principal crop.

### Changes in land values and effect on cotton crop

In 1860, the Blacklands were but sparsely settled. The depression following the Civil War, during which land values declined, caused an increase in the average size of the farms, and until 1870 stock-raising continued to be the principal farm enterprise. Numbers of immigrants from other states began to come into the black prairie, and this changed the system to crop-growing. At the same time, owners of large tracts divided their land into such small farms as they could rent. In the next decade the inflow of immigrants reduced the average size of farms to about one-fifth of what they had been in 1860, and further developed tenancy until, by 1880, over four farms out of every ten were operated by tenants. In 1925 the proportion had grown to six in ten.

The size of the farms continued to decrease, while cotton-growing reached a dominant place among farm enterprises. It received a setback from the extremely low prices between 1890 and 1900, but after that date cotton-growing rapidly gained on all other Texan farm enterprises. The increase in land values since 1900 has been nearly five times as great as the increase during the forty years previous to that date. This was due to the competition for the purchase of the land, whose products had increased in value. The rapid rise in land values since 1900 is, then, primarily the result of an increase in the productive power of the land. War-time prices for cotton also raised land values to a higher level. By 1920 practically 60 per cent of all crop land was in cotton.

### Texas the major cotton state. Cotton the cash crop

As we have seen, the one crop that can be grown on either river bottoms or western prairies is cotton. The Blacklands form perhaps the largest and finest body of cotton lands in the world, and over two-thirds of the state cotton is a profitable crop. However, the finest long staple cotton is grown west of the Guadalupe Mountains under irrigation. Ninety-one counties produced over twenty-five thousand bales each in 1926, and three, Ellis, Williamson and Nueces, produced over a hundred thousand each. Ellis produces, over a period of years, more cotton than any other county in the United States.

Farm tenancy is a serious problem in Texas, as 281,225 tenants were reported by the United States Census in 1925. Of these, 11,317 were reported as paying a cash rental for the lands occupied, and the remainder were share-tenants or share-croppers. Share-tenants, as a rule, own their tools and stock, and pay a portion of the crop as rent, though they may also pay a so-called "bonus" toward the taxes. The share-cropper has only his own labor and that of his family, and the landlord must furnish everything. The crop is divided.

Since few tenants can maintain themselves while the crop is growing, they must receive advances either from the landlord or the country merchants. Prices for supplies are naturally higher than cash prices, and when the tenant has settled his accounts there is very often little or no surplus. The Texas farm-owner usually lives in comparative comfort. The problems of rural education and sanitation are chiefly in connection with the tenant farmers.

Efforts have been made to improve their condition, but with only moderate success. Very often the tenant moves every year, in the middle of the school term, and his children lose their standing in their classes. A system of short-term credits, permitting the tenant to borrow money on reasonable terms so that he might get the advantage of lower prices for supplies, would be a great advantage.

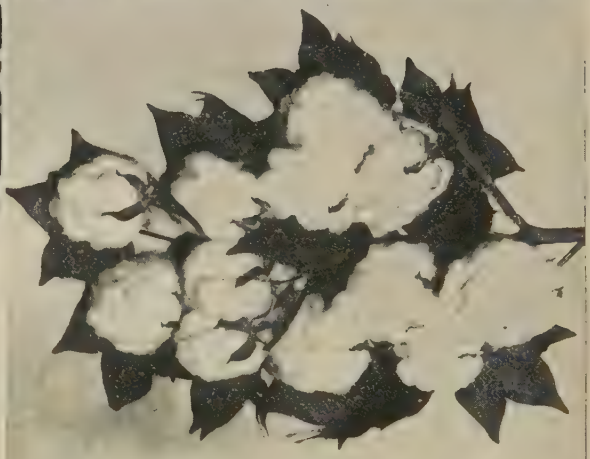
One of the causes of so much farm tenancy is the fact that cotton is a labor crop. Any farmer can cultivate more cotton than he can pick, and no successful mechanical picker has yet been invented. On the plains this problem is partly solved by the cotton sledder, which harvests the opened and partially opened cotton bolls. In other parts of the state where labor is scarce the whole cotton boll may be snapped off by hand. Special machines are able to remove most of the boll and trash, but the lint brings a slightly lower price than cotton picked in the usual manner.

### The many different grades of cotton

Perhaps you may not realize how many grades of cotton there are. If you ask a Texan, "How are you to-day?" and he

# COTTON, COTTON EVERYWHERE

This cotton field is near Wichita Falls, while the cotton branch comes from Weslaco in the Magic Valley.



Under irrigation the extreme western section of Texas across the Pecos raises cotton of high grade. This shows the cotton platform at El Paso. On this page cotton from three widely separated sections of Texas is shown. Of course no other region raises so much as Central Texas. Ellis County always leads in production.

Photographs, courtesy Missouri Pacific R. R. and El Paso Gateway Club.

# HARVESTING COTTON ON THE PLAINS

On the plains cotton does not grow tall as on the Blacklands. Picking by hand would be not only difficult but expensive. The "cotton sled" which removes all the bolls from a row has been devised.

In the slot at the point of the V, the bolls are snapped off.

Since there is little rain at the time the cotton is gathered, the bolls are often piled up in great heaps until it is convenient to take them to the gin. Though not all the cotton is saved, the process is so much cheaper than hand-picking that the practice is increasing.

Photographs, courtesy Lubbock Chamber of Commerce.

# AFTER THE COTTON HAS BEEN SLEDDED

When the cotton has been gathered on a plains farm it is taken to the gin. This is a common sight in the fall, around one of the gins in Lubbock, or any other town in the region.

Cotton-seed oil is one of the most valuable of the vegetable oils. The process of extracting it is described elsewhere in this volume. Texas is the leading state in the industry. This is the mill at Lubbock.

The cotton has been ginned and baled and is now ready to go to the railway station. Some goes to cotton mills in the United States and some to almost every important nation in the world. Texas will some day manufacture a much larger share of its huge cotton crop and thus make a double profit.

Photographs, courtesy G. O. Reeves and Lubbock Chamber of Commerce.

replies, "Oh, fair to middling," you will better understand his meaning if you remember that in the old grading, the best grade of cotton was known as Fair, the next best Middling Fair, and the third Good Middling, while after that, in rank, came Middling, Low Middling, Good Ordinary and Ordinary. Each of these gradings was, in turn, sub-divided. The grades and half-grades now recognized by the act of Congress fixing standards are Middling Fair, Strict Good Middling, Good Middling, Strict Middling, Middling, Strict Low Middling, Low Middling, Strict Good Ordinary, and Good Ordinary.

Several insect pests have hindered cotton growing in the state. The boll weevil appeared from Mexico about 1891, and gradually spread over the eastern, southern and central parts of the state. It thrives best in moist regions and during moist summers. During a dry summer it does less damage, and it has not done any great harm in the plains region, or the drier part of the usual cotton area. Dusting the plant with calcium arsenate is the chief method of destruction. Sometimes this is spread by airplanes. The weevil climbs up the cotton stalk, just as the bolls are beginning to form, punctures the square or boll, and lays one or more eggs. When they hatch the grubs destroy the boll. Another pest is the cotton boll worm which is also widespread.

### The westward march of the cotton plant

We have seen that it is the rainfall that practically divides the state into districts. The humid zone of the eastern third of the state is the home of a great deal more than two-thirds of the people, for in the rich black soil, or the sandy loam farther east, almost anything can be grown. The vast western plains lack but one thing to-day that the farmer needs, and that is water. Windmills by the thousand pump well water for a small amount of irrigation, but so many artesian wells are being driven that there is danger of lowering the water level too far. Need is felt for a law bearing on the sinking of wells that no one can misinterpret, since you can easily rob a man of his well water if you go deep enough to tap his supply. The State Forestry Service has lately tried, through the planting of trees, to check the washing away of the soil.

The mesquite zone, with cottonwoods along the streams, is rich in feathery prairie grass and wild flowers. The feathery little mesquite trees scattered here and there at least make good fence posts, and thornless cactus is becoming a valuable cattle feed. Incidentally, honey bees thrive in West Texas on the mesquite, bee brush, catclaws, huisache, and wild flowers, but curiously enough, they show an especial fondness for the cotton plant. Uvalde County is becoming famed for honey from the guajilla, a flowering plant of particularly lovely perfume.

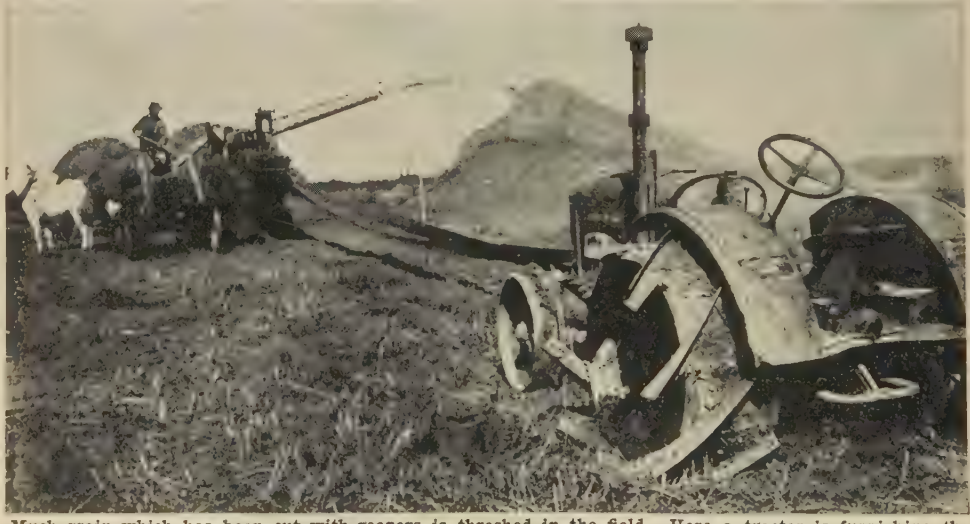
### The western plains where farms take the place of ranches

The South Plains around Lubbock, till fairly recently a grazing country, have developed so rapidly as farmland that to-day over ten times as much cotton is produced as was raised in 1920. Thanks to the level character of the land, the knee-high cotton can be gathered by machinery and its cost of production is small. A land of sunshine, its twenty inches of rainfall come just right for the growing season, and ground water may be pumped by windmills to irrigate the gardens and orchards. Good roads and railway freight service have come to surprise the coyotes and jack-rabbits, and farmers have the benefit of cheap land, electric light and power. Nor do they place their whole reliance on cotton. Grain sorghums are grown for feed for the hogs, work-mules and dairy cows, beef cattle and poultry that help to diversify the farms; while alfalfa, peanuts, cowpeas, popcorn, and such feed as millet, speltz and emmer thrive in the region. As there are few barns in such a new country, grain, too, is piled on the dry ground to cure. Every farmer has chickens, and many have dairy cows. Turkeys for the holiday markets are an added source of profit. The values of farm property in West Texas were multiplied by five between 1900 and 1920, and there has been a regular migration of population into West Texas and the Panhandle during the last few years, especially since the oil discoveries that began in 1925.

As the soil gradually changes to the light texture of the North Plains, cotton is grown equally successfully with wheat and such small grains as oats, rye and barley, while the sweet sorghum of the plains, known as red top cane, supplies

# HARVESTING THE GOLDEN GRAIN

Delta County, one of the smallest, richest and most thickly populated counties in the state, lies in the Blacklands. It would be hard to find a more attractive sight than this field of oats near Pecan Gap.



Much grain which has been cut with reapers is threshed in the field. Here a tractor is furnishing the power to run the threshing machine. Much time and labor is saved by this procedure.

This machine on a great wheat farm in Floyd County is doing double work. It is a combine which cuts off the heads of grain and threshes as it is drawn along, saving still more time and labor. Of course, such a machine can be operated economically only on a large farm.

Photographs, courtesy Farm and Ranch, and Floydada Chamber of Commerce.

# HOW THE MACHINE SAVES LABOR

This type of cultivator is seldom or never seen in some parts of the United States. It stirs the soil with comparatively little damage to the growing crop, and many acres can be covered in a day.

This wheat in Haskell County is very heavy and will yield 25 bushels to the acre. The machine binds the sheaf and drops it upon the ground, doing the work of many men with cradles.

This "combine" goes a step beyond the binder shown above. It not only cuts the oats but also threshes it; saving more time and labor. This machine is at work in Bosque County. As you see it is drawn by a tractor and the team is to take the grain to the granary.

Photographs, courtesy Farm and Ranch.

practically the entire United States with cane seed.

Texas is abandoning winter oats, and corn is still produced almost entirely for local consumption, but Texas does not even raise all of the corn that she feeds her livestock. Though the grain sorghums have been introduced comparatively recently, Texas now contributes nearly half the sorghums of the United States. Usually 60 per cent of the crop is harvested for grain, and the rest is cut whole and used for feed. Large quantities are shipped to California for use in poultry feeding. As for the wheat of the great plains of Northwestern Texas, the introduction of large scale methods, such as the combine for harvesting and threshing is enabling the farmer to make a profit on his harvest. Between 1920 and 1925, the number of farms in the Panhandle increased 38 per cent at the same time that the number of farms in the state as a whole increased but 6.75 per cent.

### Up-to-date machine farming including cotton sledding devices

In the good old days, when bad weather and impassable roads made the farm a lonely place at best, there was so much work to be done that young people seldom got together to have a good time. To-day, with radios, telephones and electric lights, to say nothing of automobiles to bring the motion picture shows within easy reach, has come more and more machine farming to make life easier and the farm more profitable. A new era in farming has been brought about by the introduction of the tractor.

One fall a cotton planter of the Lubbock neighborhood tried dragging a section of a picket fence down the rows. That way, he picked faster than a dozen men could have done with their naked hands. The next year, 1926, a number of people in West Texas tried out the idea, but instead of tearing up their picket fences, they made "sleds," which were boxes with grooves in the bottom for stripping the cotton from the stalks. With one horse attached to such a box, a farmer can gather as much cotton in a day as he can pick by hand in three or four weeks' time. Other types have also been developed. There is a six-row cotton dusting and spraying outfit which covers an average of seventy-five acres a day. The agricultural engineers of the Technological College Experiment Stations have also been studying various cotton planting devices, as well as machinery for extracting the bolls in the ginning process. One interesting device, the grain sorghum binder, begins in its almost human fashion by cutting the plant off, then ties bundles of plants with a heavy string. Nor are grains and cotton the only crops that can be grown on these high wind-swept arid lands. Enough water can be pumped by windmills for home orchards of peaches and cherries.

Electricity has reached the farm in the form of radios and electric lights, and such labor-saving devices as the washing machine and the vacuum cleaner. Aside from that, little electric power has been employed, although Texas has a cheap source of power in her lignite coal, and manufacturers of farm machinery have made it possible to operate it by the electric motor. Among those interested in reaching the farmer with the latest equipment are the Dallas Agricultural Club (composed of big farmers, business men, and newspaper friends under the leadership of the Dallas News), and the Dallas Electrical Club.

While farm efficiency has been increased by machinery, cotton growers still find the weather, and, to a large extent, the insect pests beyond their control. They are further handicapped by having to plant their crops at least half a year before they can receive the profits of their labors. Even then they are uncertain of the profits they will receive. It is therefore necessary to receive good returns for what they produce. Curiously enough, a small cotton crop has at times brought more actual money than a large one. By way of illustration, although the 1927 crop was a quarter less than that for 1926 had been, the smaller amount of cotton brought the growers a third more.

### Arizona boll weevil and cattle ticks in west texas

Unfortunately for West Texas, there is an Arizona cousin of the Mexican weevil which might thrive on the high, dry western plains if he were to break quarantine. A new pest crossed the Rio Grande in 1920, the pink boll worm. Whether he came from Mexico with the seasonal cotton pickers or whether he merely finds that part of Texas more

# FORAGE CROPS—CORN AND GRAIN SORGHUMS

This field of corn is in Shelby County, in extreme East Texas. As you see, the stalks are at least twelve feet tall.

This field of corn was grown near Littlefield in Lamb County on the South Plains which are not noted for their corn crops.

The grain sorghums resist drouth better than corn and largely take the place of corn in the plains region. This is a field of Kafir corn, a native of Africa.

The original home of milo, another of the grain sorghums, is unknown. It produces well and resists drouth. The grain is relished by all animals.

Photographs, courtesy Farm and Ranch, and Lubbock Chamber of Commerce.

salubrious, it would be hard to say. At any rate, he, too, is being severely quarantined, especially in a large area west of the Pecos River. Other quarantines are those which seek to confine the sweet potato weevil to the Louisiana line and those which aim to rid the state of the cattle fever tick.

It is hard to imagine anything as tiny as the tick actually killing cattle, but suppose we picture thousands of tiny ticks as one huge monster, with a blood-sucking appendage like an elephant's trunk. He would leap to the back of a steer, puncture the unfortunate beast, and suck it dry of blood; or he might infect it with fever germs, so that the animal would waste to a skeleton. But the millions of ticks are quite as deadly as this composite creature we have imagined.

### Cotton growing combined with onions and cabbage

In the southern cotton districts, cotton growing is sometimes successfully combined with truck growing on the same fields. In the irrigated section, farmers may double up on cotton and onions. They plant onions about the first of October in three-foot rows, then the first of March they plant cotton between these rows. The onions are pulled the middle of March or the first of April, while the cotton later brings in another crop on the same acre. In some places the land is planted in the fall to cabbages, which are cut from late December through January and February. The cotton farmer raising cabbages as a side issue may add appreciably to his income.

The important grain of South Texas is, of course, rice. There are half a million acres of swamp lands along the Gulf Coastal Plain that have been reclaimed by drainage, and these lands are enormously rich, because the rivers emptying into the Gulf are constantly carrying fertile silt to the lowlands. The rice fields can be flooded during the growing season, and there is an increasing use of irrigation. Huge ditches, fed by pumping plants, now irrigate the rice fields. The land is drained before the harvest is garnered, and rain during the harvest season is a calamity, as are heavy winds. Because of the cost of irrigation, drainage and pumping machinery, rice is usually grown on large farms. One near Houston has thirty thousand acres, and there are others of great size.

### Wheat in the Panhandle, alfalfa and milo maize

Wheat is grown in North Central Texas, but the production is greater in the plains region. Both wheat and oats do well in the Panhandle, where their chief foe is the heat of the summer sun. It is the practice to secure an early wheat crop, then plant something else on the same fields. Wheat is harvested by a combination harvester and thresher. Texas flour mills take most of it, though some is exported. Winter oats for farm animals rotate well with cotton, though the crop is too light for profitable export. Rye and barley also are grown in the Panhandle. Alfalfa and timothy hay, and the Sudan grass of the northwest are all good fodder, while alfalfa hay has no equal. Kafir corn is able to resist the drought of the South Plains. It is fed cattle like hay. Dwarf yellow Milo maize is another popular cattle and chicken feed that has been bred by the Research Division of the United States Department of Agriculture to yield heavy heads on the short stalks of the dry lands.

### High-bred livestock from hogs to poultry

"Hog laws" designed to protect unfenced fields have discouraged the raising of the old-time "razorbacks" which ranged at large, and these hardy creatures have been replaced by blooded Duroc-Jerseys and Poland-Chinas. While swine had, by 1927, declined in numbers to a third of what they were immediately before the World War, they were valued at no mean figure. The reason for the decline lay in the fact that the huge prices paid for cotton during the war years caused many farmers to abandon hogs for the more profitable crop. Unfortunately, Texas is, at the present time, consuming more pork than it produces. The agricultural experts advise the raising of hogs merely as a part of the diversified farming whereby a family produces a living in addition to whatever its cash crop may be. One fortunate factor is that the soil is exceptionally favorable to the raising of hog feed—in the east, corn, and in the west, the grain sorghums, of which hogs are fond.

Texas imports much of her work stock, though mules are being raised to a greater extent than horses. The small, tough, wild mustangs are being bred to some extent as polo ponies for the East,

# IRRIGATION IN THE MAGIC VALLEY

The irrigation canals which carry the water away from the Rio Grande are often beautiful as well as useful. There are many of these irrigation systems in the valley, which irrigate tracts of widely varying size.

Citrus trees are usually planted about 25 feet apart in order to give room for future growth. While the trees are small some crop is almost universally planted between the rows, as we see here near Weslaco.

Bermuda onions are an important crop in the south of Texas. This field in La Salle County, in the Winter Garden District, is being irrigated by water from artesian wells. You can see how the water from the ditch is diverted into the field, where it flows between the rows of onions.

Photographs, Angel Studio, Edinburg; Edrington, Weslaco; Patteson, San Antonio.

and to a lesser extent as draft animals. The latest available figures gave Texas over a million mules. Texas, with its mild, early spring, is by far the largest producer of turkeys of any state in the union. The country within easy reach of the markets of Dallas and Fort Worth is increasing its poultry production.

### Angora goats a specialty sheep an important interest

The raising of sheep and goats, together with mules and hogs, on the rough, low-priced lands of dry Western Texas has been found profitable. In some regions, only a goat will thrive. Observation of grazing sheep, goats and cattle on the range of the Ranch Experiment Station has yielded the fact that weeds furnish 21 per cent of the grazing of goats, but only 9 per cent of that of cattle. Even though Texas is already producing perhaps four-fifths of the mohair of the United States, the industry is increasing. There are two and a half million goats within state boundaries, which produce mohair for the mills for New England to convert into cloth. The first Angora goats were brought to the United States from Turkey in 1849. The goat in present favor has been bred from the Angora ram and the hardy black goat of the early Mexicans. It can be sheared twice a year, and each clip averages hair six inches long. A single Angora owned by a farmer of the Edwards Plateau has been known to produce over a hundred dollars in a season. The 1927 clip for the State totaled over eleven million pounds. Though the sheep industry has declined sharply since its gala days (1890), there are between three and four million sheep—most of them now raised in fenced pastures instead of on the open range. The Bokhara caracul sheep is bred near El Paso. The total value of wool and mohair together is at least fifteen million dollars. Horses, finally, are sold in large numbers to the Mexican army. Some Swiss Toggenburg goats are also run. A goat farm near Fort Worth sells milk to nurseries and hospitals.

### Dairying a recent development with wide possibilities

An agricultural bulletin dated June, 1927, is authority for the statement that Texas was then purchasing over 40 per cent of the creamery butter consumed in the state, and about half of the ice-cream plants were using milk powder instead of milk. The milk cows then numbered less than a million. In a study of the dairy industry of Texas, both producers and distributors were interviewed, and their statements were contrasted with the 1870 census reports. In 1870 there was one dairy cow to each one and one-half persons, in 1920 there was but one to every four and one-half persons, although in 1870 the cow gave but 26 gallons of milk annually, while the 1920 model produced 214 gallons in the same length of time. The average for the United States, however, was 396 gallons. We are forced to admit that Texas comes very near the bottom of the list in milk production when compared with many other states.

Jerseys are the favorite dairy cows, though there are many Holsteins. Texas Jerseys are even shipped to Iowa and California. These splendid cream-givers are the preference of the boys' and girls' farm clubs. They do excellently in small pastures, with selected feed and good water, and many communities are making the co-operative purchase of expensive registered sires. The Technological College at Lubbock has a School of Agriculture whose Department of Animal Industry is teaching the best methods of breeding, rearing and marketing livestock.

### Elephant Butte dam and other irrigation projects

It is believed that irrigation was practiced by certain of the Indians centuries before the white man came to the Rio Grande. Later, the Spanish Fathers had *acequias* built, of which the San Pedro ditch at San Antonio is a survival. Much of Texas has water enough, but the rainfall is insufficient in others. In these sections there are numerous small farms watered by the power of windmills or pumping engines as well as gravity. The great need is for tanks and reservoirs for storing storm water, for in the absence of forests to absorb and hold back the rain until it can seep gradually into the streams, there are floods that carry the storm water wastefully downstream to the Gulf.

The mammoth Elephant Butte Dam in New Mexico, a United States reclamation project which stores the flood waters of the Rio Grande for later distribution, waters forty-five thousand acres of Texas soil. Flood waters are also stored in Medina Lake, on the Medina River, about thirty-five miles northwest

# THE HOG FLOURISHES EVERYWHERE

These fine specimens belong to the State Tuberculosis Sanitarium at Carlsbad, Tom Green County. Their pasture is high and dry with some shade, and the pigs naturally are little subject to disease of any kind.

This litter of Hampshires comes from Sylvester, Fisher County, in West Texas. The striking markings of this breed always attract attention. It is described more fully in The Book of Knowledge.

The Poland China hog apparently never had any connection either with Poland or China, but it has been a popular breed for years. Several varieties have been developed. These are the "big-bone spotted" and some of them grow to an enormous size and weight. The types more often seen are differently marked.

Lower pictures, courtesy Farm and Ranch.

# PIGS AND YET MORE PIGS

The state educational and charitable institutions of Texas have some of the best stock in the state. These were bred on the farm of the Texas Technological College at Lubbock, one of the newer state institutions.

The larger picture shows a litter belonging to a member of a boys' club near Lubbock through which Texas youth are learning. The inset comes from the Delta County farm which produced the oats shown elsewhere.

Much interest has been shown in the contests to produce a litter which shall weigh a ton at a given age. In the contests strict accounts are kept of the kind and amount of feed consumed. It is rather surprising that Texas does not produce anything like as much pork as it consumes.

Photographs, courtesy Lubbock Chamber of Commerce and Farm and Ranch.

# SHEEP AND GOATS ARE NUMEROUS

Though many of the western ranches are being broken up into farms, Texas still has thousands of sheep. Here is a large flock on the South Plains with the herder and his faithful dog in charge.

Two fine registered Lincoln sheep and their owner, in Cooke County.

A valuable Angora showing the length to which the hair sometimes grows.

Some parts of Texas are admirably suited to goats, as they do not object to rough land and can get a great part of their food from shrubs. Texas furnishes most of the mohair produced in the United States.

Upper picture, courtesy Lubbock Chamber of Commerce; centre, Farm and Ranch; lower, Jordan Company.

of San Antonio, and in Lake Kemp. Indeed, the latest single irrigation project in the state is that which receives its waters from Lake Kemp, above Wichita Falls, and this lake is one of the largest artificial reservoirs in the United States. A number of irrigation projects lie along the Trinity River, including more than half the levee districts of the state. The Brazos has large irrigation projects in the Coastal Plain. As the lower channel of the Colorado is usually choked with floating logs and silt, the only large reservoir on the Colorado is that at Austin; but there is a rice growing area near the coast watered from the channel. Texas has between eight and nine hundred thousand acres that are irrigated.

### Canals of lower Rio Grande and the Magic Valley

Brownsville, twenty-six miles from the mouth of the Rio Grande, opposite Matamoras, in Mexico, lies in the heart of the Magic Valley Delta. It is over four hundred miles farther south than San Diego, and only a little farther north than Key West. The soil is a rich alluvial deposit of silt brought by the river or left by the recession of the Gulf, and the average winter temperature is but sixty-five degrees, there are seldom frosts, and it is possible to raise not only the earliest truck for the Northern markets, but two crops in one year. Citrus fruits and cantaloupes are specialties of the region. The entire lower Rio Grande Valley, from Roma to Point Isabel, is irrigated by the waters of the Rio Grande. A semi-arid and semi-tropical climate, the abundance of cheap labor from Mexico, and the fairly recent building of an irrigation system has developed the Valley, all in less than one generation.

The first canals privately built were afterward merged into irrigation ditches. Of the fifteen irrigation canals of the Valley, ten are owned by farmers of the irrigation districts and five by private individuals or corporations. If the main canals were laid end to end, they would make a ditch fifty feet wide that would reach to Chicago. Oil-burning engines are used for pumping. Although in 1909 there were few roads in the Valley, save the old Military Road leading up the Rio Grande from Brownsville (impassable during the rains), there are now a thousand miles of well-drained and graded roads including miles of paved highways and gravel roads. The average Valley farm consists of about forty acres under intensive cultivation.

### The market basket section of the state

Thanks to the mild springs, Texas has a big future in the raising and shipping of "early stuff" from the truck farms. Tomatoes, onions and cabbages all grow luxuriously in South Texas, as do melons, berries, and citrus fruits. There are even such novelties as avocado pears, pawpaws, guavas, quinces and olives. The Winter Garden District includes the counties of Maverick, Zavala, Dimmit and parts of several other counties. The change in Southwest Texas from cattle ranches to irrigated truck farms is typified by the development of the spinach industry. In 1920, less than a thousand cars of spinach were rolled out of Texas, while in 1927 there were five times as many. The first "Bermuda" onions of the entire United States come from Texas. Spain, though, is offering keen competition. The growing of onions for the Eastern markets began to reach large proportions about 1904. The seed is purchased from the Canary Islands. Onions require a rich, well-drained soil, whether dry or irrigated. The farmers of Collin County have gone into the onion business almost as a community.

### Watermelons, cabbages, tomatoes and sweet potatoes

Texas ranks second in the United States in the growing and marketing of watermelons, and they are planted in every section. Parker County produces more melons than any similar area in the United States. When ripe, the melons are clipped, not pulled, and their stem ends treated. They are shipped to the Middle West in ventilated cars, and ride on beds of straw. Shipments begin from the Rio Grande in early spring, while the crops in the Panhandle last into October. Cantaloupes are also largely grown. Sweet potatoes thrive in many quarters of the state, provided the same land is not planted too often to this crop. If "sweets" are to be held till later in the season, they are, after the usual drying, put through a curing process which evaporates their surplus moisture. Everywhere in South Texas the growing of cabbage has come to be an important industry, though it centres around Corpus Christi and the Lower Rio Grande Valley.

# FINE DAIRY COWS FROM THREE SECTIONS

These graceful cows among the wild poppies with pecan trees in the background make an attractive picture. They are a part of a herd in Guadalupe County where the dairy industry is becoming important.

Texas has more Jerseys than any other state. Not so many years ago the only milk in the South Plains country came from tin cans, but now the dairy industry is developing rapidly in the section.

This herd of Holsteins furnishes a part of the milk supply of El Paso. Perhaps these cows' milk may go to help give back strength to some of the invalids who flock to this city in the hope of recovering their health, a hope that is frequently realized.

Upper picture, © Earl D. Newton; others, courtesy Lubbock Chamber of Commerce and Gateway Club, El Paso.

Tomatoes are grown extensively in East Texas and also in South Texas.

### FIGS, GRAPES AND BERRIES, SORGHUM AND TOBACCO

String beans thrive in South Texas, as do beets, which require frequent irrigation, and carrots, with which they are usually marketed. Cucumbers and eggplant have become an important item in South Texas, as have lettuce and romaine, which may be planted in double rows—that is, both lengthwise and crosswise. Texas salad greens find their way as far east as New York and Boston. Peppers do well, and are in demand for the home markets.

Sorghum molasses is a home product, freely used for "long sweetening." Considerable syrup is also made from sugar cane. Though early frost is fatal to sugar cane, the lower valleys of the Brazos, the Colorado, and the Rio Grande are well fitted for sugar plantations.

Figs and berries are raised both for canning and table use in the irrigated Lower Rio Grande Valley, the Winter Garden, and around Laredo, as well as in East Texas. Blackberries are chiefly grown around Lindale in Smith County, where several thousand acres of vines supply several large canneries. The commercial strawberry crop is not so important as some others, though the berries are grown for local use in many counties. Valuable hybridizing work with the Muscadine grape has been done near Denison. Roses are grown for the markets of the United States in several East Texas counties, as Van Zandt, Smith and Cherokee. Tobacco, though grown for home use before the Civil War in East Texas, has not been planted save as it has been grown experimentally by the United States Government around Nacogdoches.

### ORCHARD AND TREE CROPS FROM PEACHES TO PECANS

Pecans have always grown wild along the streams. For several generations they have been cultivated in the Blacklands, and young pecan trees have lately been set out by the State Department of Agriculture. Since the invention of a nut-cracking device that removes the kernels whole, pecans have been enormously popular with candy manufacturers. The tree is one of the few adapted to Western Texas, though San Saba is the leading pecan county. To-day there are between two and three million pecan trees in the state, and a paper shell variety has been bred that brings a dollar a pound. The most important peach groves are on the sandy lands of East Texas though there is a considerable peach area farther west, and Texas is third in peach production. It is a fruit easily bruised and is injured by frosts. Pears are grown commercially only around El Paso.

Citrus fruit is a comparatively recent possibility for Texas (though Orange County was so named because of an ancient grove), but is one of rapidly growing importance. Cameron and Hidalgo counties have developed splendid orchards of seedless grapefruit and a few of pink grapefruit. The first men to try orange growing failed through lack of knowledge of how the work should be done. Citrus trees thrive on newly cleared land, provided the clay sub-soil is made to hold its moisture by careful cultivation. The Valley of the Lower Rio Grande has eighty thousand acres in citrus fruit, chiefly grapefruit, while the Gulf Coast makes a specialty of the Satsuma orange. Lemons and grapefruit orchards are being planted on a large scale in Bee County and the Laredo district. Mission is the great fruit centre, though packing and grading plants have been established at other central points.

The rapid growth of the citrus industry gave rise, in 1922, to the Lower Rio Grande Citrus Exchange, a co-operative marketing organization that has had all its fruit standard packed and that has installed several packing plants for its members. The exchange insists that the fruit, chiefly a fine seedless grapefruit, and some pink grapefruit, be clipped from the trees and placed in field boxes, then transported, usually by motor trucks, to the nearest packing plant to be recorded, cleaned, and packed according to grade. The money received is distributed to the growers as soon as the cost of packing and selling has been deducted. Orchards are sprayed against insect pests by power sprays. The lady bug is a friend of the citrus fruit grower, as she feeds upon the eggs and young of injurious insects. Nursery inspection laws have been passed by the State and Federal governments to guard against the introduction of such foreign pests as the citrus canker, the Mexican fruit fly, and the Florida scaly bark.

# IN THE WINTER GARDEN DISTRICT

The Winter Garden District is a large producer of onions. Elsewhere we show irrigation in an onion field. The crop is here being crated for market.

Spinach is another favorite crop in the region and in some years is very profitable. The inset shows it being gathered for market. It is shipped in baskets similar to the one shown.

Photographs by Harvey Patteson, courtesy Callicotte Farms.

### THE TIMBER OF THE PINE BELT IS A VALUABLE CROP

The magnificent forests of long-leaf pine in East Texas form part of one of the finest bodies of standing timber in America, and furnish the most valuable timber cut within state boundaries for commercial purposes. The largest growth of loblolly pine and shortleaf pine lies to the west and north of these forests. There is considerable hardwood in East Texas, extending west for several hundred miles, which is used for furniture and building. Oak, red gum, tupelo and ash are the principal hardwoods cut, but the total amounts to little more than a seventh of the pine and cypress. While Texas now ranks as the seventh or eighth state in timber production, it is feared that so much of her timber crop has been burnt, or else cut before its time, that the merchantable pine will all be gone by 1940. The Forestry Association is working zealously for conservation and reforestation. It recommends the purchase of larger areas for reforestation, a lightening of the taxes that the timber owner is obliged to pay (so that he need not cut in excess of the demand), and the adoption of a state "forestry code" for the registration, policing and protection of forest lands. One bad practice has been the ranging of swine and cattle in the cut-over areas where a second growth ought to be getting a start. Another is the practice of dragging felled logs to the railroad by high-power machinery that destroys the young trees in its path.

The appalling need of a more far-sighted policy in harvesting Texas timber will be seen from these figures, supplied by the State Forester in January, 1928:

| | ACRES |
|---|---|
| Original area of Texas Virgin pine | 14,000,000 |
| Present area of Texas Virgin pine | 1,000,000 |
| Cut-over areas with no renewal | 3,000,000 |

What Texas may have been in the days of dinosaurs, we can only imagine from the remains of the petrified forest in Brewster County. There, in the elbow of the Big Bend, are petrified stumps as wide as forty feet, projecting through the deposit of volcanic ash.

### EFFECT OF WORLD WAR ON CO-OPERATIVE SOCIETIES

So much for the raising of farm products. What about selling them? After the World War, Texas began trying to market her produce more scientifically; and though farmers usually care more for independent methods than do city men their effort to secure better prices has expressed itself in a great co-operative marketing movement.

The Farm Bureau Federation is now carrying out a plan for co-operative marketing. The Smith-Lever Act, passed by Congress in 1914, provided a programme of agricultural extension work, and encouraged extension service experts and county agents to spread a knowledge of scientific agriculture. The World War with its need of increased production proved the value of these advisory experts. At the close of the war, when the general cost of living had risen, at the same time that the prices of farm products had fallen, farm mortgages increased, and banks failed, it was agreed that there must be more businesslike methods of marketing farm products. With this end in view, the Extension Service men and the United States Department of Agriculture aided the Farm Bureau Federation in carrying out a plan for co-operative marketing. Not only are better and steadier prices the aim for produce marketed co-operatively, but new foreign markets for surplus farm products are sought, and finally, cheaper sources of fertilizer and more economical means of production are being studied. The state farm bureau also became a part of the Farm Bureau Federation.

A National Council of Farmers' Co-operative Marketing Associations counts among its first members the Texas Wheat Growers' Association and the Texas Farm Bureau Cotton Association. With them are affiliated such varied interests as those of the melon growers of Georgia, the prune and apricot men of California, and the citrus growers of Florida; for they have found that every kind of farm product, from wheat for the markets of Europe to perishable vegetables from the truck farms, can be marketed co-operatively. The two necessities are that there must be a sufficient quantity raised within reach of a central shipping point, and that there be a good business man at the head of the organization.

### RURAL CREDIT AND CROP INSURANCE

Though bankers and business men are sympathetic to the movement, many con-

# GRAPEFRUIT IN THE RIO GRANDE VALLEY

This picture is aptly called a "mile of grapefruit," and shows a young grove not far from Weslaco, which will soon come into bearing. It is seldom that one sees such a striking picture as this.

Here is a nearer view of a grove in a more advanced state. The trees are older and the crop for the year has been picked. The grapefruit flourishes in this region and the quality is excellent.

The grapefruit gets its name from the fact that it grows in clusters as wild grapes do. It is sometimes called the shaddock from a British officer who brought it to the West Indies from the East.

Upper photographs by Edrington, courtesy Missouri Pacific R.R.; bottom, courtesy Stuart McGregor.

sumers object to the idea of destroying surplus produce in order to raise prices; but the idea of the leaders of the movement is not to control prices through speculation, but to save the costs of raising the crops and distributing them. Co-operation is also proving valuable in the matters of rural credit and crop insurance. For instance, the cotton growers may obtain of their own association (at low rates of interest), credit to enable them to produce a crop. Members can pool everything of a perishable nature that they raise, and the association can insure their cotton as soon as it is put under a bill of lading or in the compress. In return, the growers must observe the regulations regarding grading, shipping and packing. Grading and stapling is done by unbiased experts, so that members get the full value of each bale. Cotton prices have fluctuated widely in recent years, and one of the first problems of farm relief has been to secure a profitable price level.

The Division of Markets of the State Department of Agriculture encourages marketing associations, instructs growers and shippers in regard to grading, picking and classifying their fruit and vegetables, inspects products, and assists growers and shippers by supplying data as to market needs. In addition, specialists of the several agricultural colleges, the University of Texas, and the School of Agriculture of the Texas Technological College, opened in 1925, prepare an annual Agricultural Outlook.

At the Conference of the American Cotton Association held in January, 1928, with the Bureau of Agricultural Economics, it was resolved that the welfare of cotton growers as a whole would best be served (1) by restricting the cotton acreage, (2) by cultivating intensively, so as to increase the yield while lowering the cost of production, and (3) by planting poor cotton land in legume crops for improving the fertility of the soil. Finally, they resolved to try to stabilize cotton prices. Every boy of the cotton belt no doubt understands that it lowers prices to offer the market more cotton than enough to supply a paying demand. The trouble is that usually the tenant farmer has debts to pay, and must sell his crop as soon as it has been harvested. No farm organization has been strong enough to agree upon a reasonable price for cotton, and then to hold any temporary surplus off the market until a profitable price could be had.

### Recommendations of State and Federal Departments of Agriculture

All agree that there is need of conserving the fertility of the soil. Crop rotation is advised and the growing of winter forage crops, as well as the drainage of the wet lands, and the terracing of the dry lands to hold back the rain water till it can sink in. When the swamp land along the coast is drained, and the overflow land along the river drained and in some cases protected by levees, the reclaimed land is almost incredibly rich; and the United States Department of Agriculture has long been surveying the coastal swamps with a view to an enormous network of drainage ditches. Men who have surveyed the Lower Rio Grande country advise those interested as to how the soil can be made to yield the best results, and how insect pests and plant diseases should be treated.

The Division of Entomology of the Texas Department of Agriculture is instructing growers as to how to avoid insect pests, how to get rid of animal pests, and how to select seed that will produce the finest grade of cotton. It has had to make a special fight against the Mexican pink boll worm, the Mexican fruit fly, and the sweet potato weevil. The Division of Horticulture is interested in citrus canker, the recently imported disease of grapefruit, orange and lemon trees. The Warehouse Division has two cotton classers. The State Department of Agriculture has a seed division, one for nursery inspection, and a gin division. It publishes a monthly Marketing Bulletin at Austin to assist in the sale of farm products by discussing farm problems and giving producers free advertisements.

### Farm Education, Prize Contests and Agricultural Research

The Agricultural and Mechanical College is yearly training men to do their own farming in the most scientific way. In addition, its Extension Service, at College Station, is carrying out a far-reaching programme of farm education. Its field experiment sub-stations in sixteen different agricultural regions are studying the problems peculiar to those regions, developing new crops, and telling those interested how best to produce and harvest their crops. They are also introducing

# TWO IMPORTANT TEXAS PRODUCTS

Wherever poultrymen find the production of eggs more profitable than market poultry, you are likely to find White Leghorns. This is a flock across the Pecos, where the industry is developing.

Another flock of White Leghorns, this time from Colorado County, many miles from the one above.

Texas raises more turkeys than any other state. The great bronze gobbler in Mills County, upon which the little boy is seated, weighed 48 pounds. The picture on the right shows part of a fine flock in Coryell County. The number of turkeys sent to market has increased greatly since 1920.

Photographs, courtesy Farm and Ranch.

# SOME OF THE CROPS GROWN IN VARIOUS PARTS OF THE STATE

This young peach orchard in Coryell County has grown amazingly and is now yielding a considerable crop. The state is usually third in this fruit.

The principal commercial pear orchards are in El Paso County, though this fruit grows well throughout the whole northern part of the state.

In this young vineyard in the Winter Garden, peanuts, canteloupes and watermelons are planted between the rows while the vines are growing.

The melon field in San Saba County shows how well this crop grows. The county is the leading producer of pecans in the state.

Photographs, courtesy Farm and Ranch, and El Paso Gateway Club.

new blood-lines in livestock. The results of their researches are printed, and in special cases the data are given farmers even before publication date—as in the case of Dickens County, which needed to know if the land was suited to alfalfa. The State and the United States Departments of Agriculture also publish a large number of farm bulletins which may be had free, on request. The Texas Experiment Station frequently conducts joint researches with some chamber of commerce or other association. For instance, a survey of Texas soil was made in 1925 by the Extension Service in co-operation with the Bureau of Soils of the United States Department of Agriculture, and maps and bulletins of advice were issued.

The United States Department of Agriculture co-operates in the work of the Boys' and Girls' 4-H Clubs. The four H's on the clover badge stand for head, heart, health and hand, all of which a boy must train. Away back in 1913, when the boll weevil became a serious menace to cotton growing, and the United States Department of Agriculture sent Seaman A. Knapp to find what could be done about it, Dr. Knapp enrolled boys to help conduct his field demonstrations. He thought that a rotation of crops would help control the weevil, and began organizing boys' corn clubs. Girls' canning and poultry clubs were also formed, and to-day both boys and girls are raising home gardens under club leadership. Young people of Southern Texas have also begun to raise Jersey dairy cows; while in West Texas they rear baby beef steers, and are finding that sheep bring quick results. The only investment necessary to the member of a poultry club is that of buying a setting of pure-bred eggs. Boys are also raising bees, peanuts, and cattle feed. To become a club member and enter the prize contests, it is necessary only for a boy to be between ten and eighteen years of age, to agree to study the instructions furnished him, to plant his own crop, and if he tries for a prize, to keep the crop record blank that will be sent him. As many girls are interested in clubs for home demonstration work as there are boys in the agricultural clubs.

### Results achieved in prize contests

The amazing results that can be achieved when the best methods are followed, are shown by the contests managed by the Dallas News in co-operation with the Agricultural and Mechanical College and other organizations. This paper has for sixty years waged a campaign of crop diversification, contending against a state of affairs where the majority of the farms are planted to one crop. It has therefore been a condition of the recent contests that competitors must also raise food crops. The four-year programme of "More Cotton on Fewer Acres" came to a climax in 1927 when a prize of $1,500 went to John W. MacFarlane, a farmer of Anderson County who not only raised his food in addition to cotton, but produced $20,000 worth of feed for his stock. He had previously won the same prize in 1924. The winner's land had been under cultivation for fifty years, but far from being worn out, his five acres yielded 6,922 pounds of high grade cotton, while the average yield of cotton throughout the Southern States has been but 152 pounds to the acre.

During the four years of the contests, practically seventeen thousand farmers in the cotton counties took part, and the information brought out by their experiments has been given wide publicity. This has been an important factor in farm education.

Prizes have also been awarded by the Dallas Cotton Exchange, for the raising of "better staple and quality cotton"; by the Texas Cotton Association, and by the Houston and Waco Cotton Exchange. The claim is made in many quarters that the Texas crop could be grown on half the present acreage, and that the other half of the farm could then be used for raising feed and food crops. Another prize contest, that offered by the Texas Industrial Congress for a record-making corn crop, brought to light the fact that, whereas the state had averaged only twenty bushels to the acre (to Iowa's thirty-eight), the contestants averaged sixty. The Texas Industrial Congress, led by the late Henry Exall, has performed valuable work in encouraging the conservation of the soil and such methods of cultivation as will increase crop production. The organization has offered many prizes for "the largest yield, on a limited number of acres, of a variety of crops." Among other aids to rural betterment have been the Warehouse and

Marketing Division of the State Department of Agriculture.

To help the unfortunate one-crop farmer who suffers from the unstable market conditions, fifty business men of Waco got together early in 1927 and formed an Agricultural Development Association that students of agriculture hope will be copied in many parts of the state. First it sent questionnaires to two thousand land owners of the region. The replies showed that less than a third of the farmers were keeping milk cows. There were two thousand cows in the territory, and five thousand were needed. Waco bankers willingly financed the purchase of more cows, and in a few months there were six thousand dairy cattle cheerfully roaming the pastures. That not only supplied the home tables, but led to the exporting of cream, which brought ready money to the farmers. Eggs were the next interest of the community, for a survey disclosed the fact that less than one-third of the tenant farmers were keeping poultry. A co-operative shipping service was established. The association started improving the breeds of the farm animals, and it arranged to have a branch of a nationally known milk condensing plant located at Waco. It also urges the raising of only the best cotton, and just enough of that to get the right price for it. A South-wide Cotton Council was incorporated in 1928 to co-ordinate the work of all agencies interested in cotton production.

### Agricultural sub-stations aiding farmers throughout texas

The experiment farms of the Agricultural and Mechanical College are constantly discovering improved methods of cultivating and harvesting both cotton and other crops. Their recent publications include studies of the varieties of cotton best adapted to the Gulf Coastal Plain, or to the Red Prairies in the North, what kinds of sulphur treatment are most distasteful to the flea hopper, how the pink boll weevil may be dusted with poison dropped from aeroplanes, how cottonseed hulls may be used in fattening calves, and how in the South, rice may be used in feeding dairy cows. Dairy farmers are shown how pure-bred stock returns a profit, and how hogs and chickens may profitably be added to consume the by-products of the farm. One farm bulletin deals with spraying for the control of fig rust; one with weighing cattle, and others with the breeding of animals and plants and the growing of long-leaf pine. Men trained in scientific farming have learned that the black land region of Central Texas has been yielding less cotton, as the soil has become worn out and infested with root rot. Happily, this black soil can be built up, and weeds, weevils, and root rot fungus starved to death, if a certain rotation of crops is practiced. The experts have tried nine different systems of crop rotation on the experiment farms.

To illustrate still further the kind of help the sub-stations are giving the farmer, that near Troup, in the centre of the timber belt, has found that not only corn and cotton, but peaches, tomatoes, grapes, nuts, potatoes, and clovers are suited to the region. The station near Angleton, on the Gulf Coastal Prairie, has installed a good drainage system, and found that peanuts and cowpeas, as well as corn and cotton, will do well down there when drainage is provided. The station near Spur, in dry West Texas, has, on the other hand, found how to keep the rain water from running off, by terracing the fields. The station near Denton has tested out a number of grains, that at Temple has bred and distributed Belton cotton, which is especially adapted to the Blacklands, and the station of the much drier region around Lubbock has been trying out a new early cotton named Westex which will mature at the higher altitudes and during the shorter seasons of the north and west. The station east of Balmorhea, at the foot of the Davis Mountains, is interested in the possibility of irrigating that rich soil. That at Nacogdoches, where there is fifty inches of rainfall a year, was originally interested in tobacco, but it is found that even here a change of crop is best. A forage crop station near Chillicothe is operated jointly by the Texas Experiment Station and the office of Forage Crop Investigations of the United States Department of Agriculture.

The station at Sonora is studying the best breed of sheep, ailments affecting goats, and the kind of forage they like best. In the spring of 1926, a series of experiments was made at four stations by which it was found that more tomatoes can be grown in sandy loam soils when

# WHERE SOME OF THE FARMERS LIVE

Not all farm homes are so attractive as the Marion County home on the left with its great mangolias. The McLennan County home is surrounded by a natural growth of trees, and shrubbery has also been planted.

This new home in Jones County will require time for the shrubs and grass to grow. On the right is another new farm home, this time in Hamilton County in North Central Texas.

These two homes are not far apart as distances go in Texas. One is in Lee and the other in Colorado County. Both of these counties have sufficient rainfall and considerable wooded sections.

Nueces County is one of the leading cotton counties, but this farm does not grow cotton exclusively. On the right is a farm home in San Saba County where comfort abounds.

Photographs, courtesy Farm and Ranch.

# PECANS AND PEANUTS ARE IMPORTANT

The pecan is a native tree but varieties superior to the forest trees have been developed. These trees are mulched with cotton bolls. To save time twigs of the better varieties are grafted on the native stock. Note the difference in the appearance of the bark of the twigs and of the bole on the small tree in inset.

On the plains when peanuts have been dug they are stacked, vines and all, and allowed to cure. Then they may be pulled from the roots and sent to a shelling establishment. Many peanuts are fed to hogs and in moderation are a valuable food. An excellent food oil is obtained from peanuts.

Pecan photographs from Farm and Ranch; lower from Lubbock Chamber of Commerce.

# THE JERSEY DOES WELL IN TEXAS

This magnificent Jersey bull is owned in Wharton County, which has many good cattle.

Many farmers are proud of their cattle and strive to get and keep good specimens.

Johnson County also boasts of its cattle. This bull was sired on the Island of Jersey.

This Jersey cow is an excellent specimen of the breed, and might be well taken as a type.

Though apparently not all of these cattle are pure bred Jerseys, one who knows cattle would guess that Jersey blood predominates. It is a part of a dairy herd near Henderson, Rusk County, East Texas.

Photographs, courtesy Farm and Ranch.

An apiary near Pearsall, Frio County, in the Winter Garden District.

potash is used in the fertilizer. The station at Weslaco, in Hidalgo County, finally, is most interested in the raising of vegetables and fruits, especially the seedless grapefruit.

The extension men believe that everything eaten on Texas tables should be raised on Texas farms; because in 1927 the State spent six million dollars for lettuce and tomatoes shipped from California, and fifty million dollars for pork products that might have been raised at home. It also bought twenty million pounds of butter, although in East Texas, cows may graze for ten months of the year, and during the remaining two months, require no shelter save that of an inexpensive shack.

### Scientific methods and discoveries of tremendous value under way

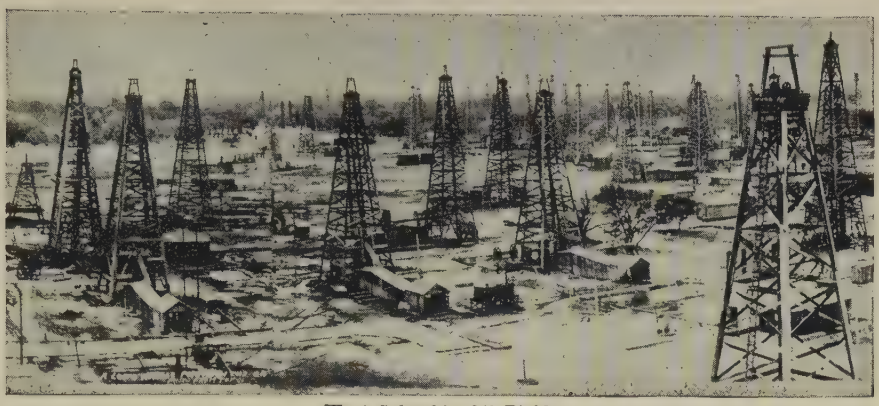
The centre of the bee-keeping industry is located about twelve miles east of San Antonio; and a research laboratory has been established there to study how to breed better honey-making bees, what kind of pasture is best for them, and how the hives can best be protected in winter. The laboratory raises high grade queen bees, and distributes them to farmers.

The sub-station near Lubbock, while not a school, serves the purpose of a practical farm school for the farmers of the South Plains. Every type of crop possible to the region is grown here under various conditions, in order to discover the best crop and the best methods of cultivation, and the data of these experiments are given to farmers. Much of the agricultural progress of the past fifteen years on the South Plains is due to the researches of this agricultural experiment sub-station.

### The future development of farming in Texas

We have considered the long list of products raised in Texas, but we must remember that while Texas holds the lead in the total value of her crops, she also has the largest number of acres under cultivation, and she has a distressing number of tenant farmers who are mortgage-ridden. There is encouragement in the fact that she has only begun to employ the more scientific methods of crop production, and that her opportunities for farm education are unexcelled. The possibilities for future development are correspondingly vast.

Model dairy barn of the Methodist Orphanage at Waco.



West Columbia Oil Field.

# MINES AND MINERALS OF TEXAS

AT the beginning of the century, Texas ranked low in mineral production, twenty-first among the forty-five states then belonging to the Union. During the next ten years it lost one place, but since 1910 advance has been rapid. The state was sixth in value of mineral products in 1919 and fourth in 1925. Only Pennsylvania, Oklahoma and California produced greater values in that year.

This high rank is due chiefly to petroleum and its products, in which the state has been surpassed only by California and Oklahoma, and, in 1928, seemed to be passing both of these.

The state leads in the production of sulphur and helium gas and is first or second in quicksilver, or mercury, and in several other products takes respectable rank. It is tenth in the production of silver, and holds the same place in the cement industry. The production of clay products, asphalt and gypsum is large, and the value of sand and gravel is counted in millions. The production of lignite is important and likewise that of limestone and salt. Other minerals are produced in smaller quantities.

Texas has great mineral resources as yet undeveloped. Some of these will add greatly to the wealth of the state when population and manufacture increase sufficiently to afford a market. At present, distances are so great that it is not always profitable to work the deposits of some minerals. A rough and ready classification of minerals is into metals and non-metals. Generally we speak of metals first, but since coal is so important we shall speak of it before going on to the metals.

There are large deposits of bituminous coal, but the veins so far opened are not very thick, and the cheapness of oil as fuel has prevented large production. There is also some cannel coal.

You have been told elsewhere that lignite is half-made coal. This means that it is not fully carbonized, is not so easily handled and does not produce so much heat as real coal. There are enormous deposits of lignite in Texas stretching in two bands across the state, one from Laredo to Texarkana and another between this and the coast. This lignite is used by many local establishments but cannot be shipped easily or profitably. Experi-

ments with powdered lignite have been successful and at Trinidad is a great plant which burns powdered lignite fed through pipes and generates electric current which is distributed by wires. There is a similar plant at New Braunfels and others are planned. This may be the beginning of a great development of industry in the state. The power plant can be so located as to gain the greatest economy of operation, and the power can be sent to the manufacturing plant no matter where located. At any rate Texas has large fuel reserves if the supply of oil and natural gas should fail some time in the future. The known coal beds are estimated to contain at least eight billion tons, and the lignite beds thirty billion tons. This amount could turn millions of wheels for many, many years. Meanwhile experiments with lignite are constantly being made. Under heat and pressure briquettes are formed which make convenient fuel, and by-products such as ammonia, cresol and coal tar are also obtained. Experiments have shown that oil can be made from lignite, but at the present prices the operation is not profitable. A special product known as Darco is made from lignite in Harrison County. It is used in sugar refining.

### WHY TEXAS IS NOT A GREAT IRON STATE

There are enormous deposits of iron ore in Texas, and years ago there were numerous small blast furnaces which used charcoal to smelt the ore. In one of the volumes of The Book of Knowledge you are told that this was the practice everywhere until some time during the last century. Now the great amount of wood required makes it difficult to keep a large furnace going, and as wood becomes scarce, such furnaces generally go out of business. Iron is now smelted almost entirely by means of coke, and Texas coal will not make good coke. At present it costs too much either to bring the coke to the ore or to take the ore to the coke. So unless good coking coal is found near by, or else some one discover a new method of smelting iron, the great deposits of Texas are likely to remain unworked for the present. Perhaps a method of using lignite will be discovered some day. If this could be done, Texas might easily become a great iron-producing state. At present some of the ore is used in building roads.

### THE MANY MINERALS FOUND IN TEXAS

Many counties in Texas have deposits of various minerals, but with the exception of oil, the largest variety is in what is called the Central Mineral Region, and on the Trans-Pecos country. The first is a rough hilly region with Burnet and Llano counties as a centre. The name of the second explains itself.

The list of metals profitably mined is not very large. A silver mine in Presidio County produces about a half million dollars in value every year and there are a few smaller mines. Gold has been found in several localities, chiefly across the Pecos, but, so far, the quantity is small. Small amounts of copper have been found both across the Pecos and in North Central Texas, and also in Burnet County. It is possible that larger deposits may be found. Lead is also found in various places, but so far, only in small quantities. The mercury also comes from across the Pecos, and the principal mines are in Brewster County. Even this production makes the state second only to California, and in some years first.

There is considerable manganese, which is used in the manufacture of steel, glass and fertilizer, but the deposits are in the western part of the state and it does not pay to ship it a long distance. Zinc has been found in considerable quantities across the Pecos, and also in Burnet and Montague counties, but the mines have not been extensively worked up to the present. Large smelters have been located at El Paso and Amarillo, because of cheap fuel, but they work chiefly upon ores shipped from outside the state.

Several other metals have been found in small quantities. There is tin in Hudspeth and Mason counties, and the rare metals, titanium, tungsten and uranium have also been found in the southwest. In fact this region, particularly those counties across the Pecos, show a great variety of minerals though the total production so far is not large. This Trans-Pecos region is a fascinating section of the state.

### A MINERAL PRODUCT OFTEN OMITTED

The minerals which are not metals make up a much larger proportion of the state's production. The most valuable (next to oil) is one which is not counted

# TWO IMPORTANT MINERAL PRODUCTS

Fuller's earth has been known for many centuries. Originally it was chiefly used in the process of making cloth. The principal use to-day is in the various oil industries. Oils filtered through it lose their unpleasant odors and much of their color. This is a pit of the Texas Company at Riverside, Walker County.

There are enormous deposits of granite in Texas. Those of the Central Mineral Region have been most worked. Granite Mountain in Burnet County was the source of the granite used in building the Capitol. This quarry of the Texas Pink Granite Company at Marble Falls, shows how the blocks are transported to the railroad.

Pictures by courtesy of Stuart McGregor, editor Texas Almanac.

in the mineral production, and, in fact, is not usually thought of as a mineral at all. This is water from deep wells. A considerable part of the water-supply of the cities and towns of Texas comes from artesian wells, and this supply has made possible the development of many sections from ranching into agricultural regions. The total value of this water cannot be calculated but it is estimated that at least twenty million dollars a year is paid for the priceless fluid, coming from deep wells. Of course, thousands of individuals or corporations own their own wells, and the value of this water is not included in the sum mentioned above. The water from many springs is believed to have medicinal value and there is a large sale of such waters.

Going on to other mineral products, we find that sulphur is probably the most valuable. Until 1903 Italy had almost a monopoly of the world's supply. In that year a new process, developed by Herman Frasch, made the deposits of Louisiana available, and about ten years later the great Texas deposits on the Gulf coast were opened. Now Texas produces the greater part of the sulphur used in the world. It comes chiefly from Matagorda and Brazoria counties.

The process is interesting. Wells are sunk to the bottom of the sulphur deposits. Into them are pumped water much hotter than the boiling point, and compressed air. The hot water dissolves the sulphur and the air lifts the nearly pure liquid sulphur to the surface. Thence it is conducted to the vats, which are simply immense wooden boxes sitting on the ground. As the sulphur cools it quickly solidifies, and when the desired height is reached the wooden sides are torn away and a solid block of sulphur perhaps fifty feet high and covering an acre or more of ground is exposed. When needed, sections are blasted from the side of a block, and loaded into cars by great scoops.

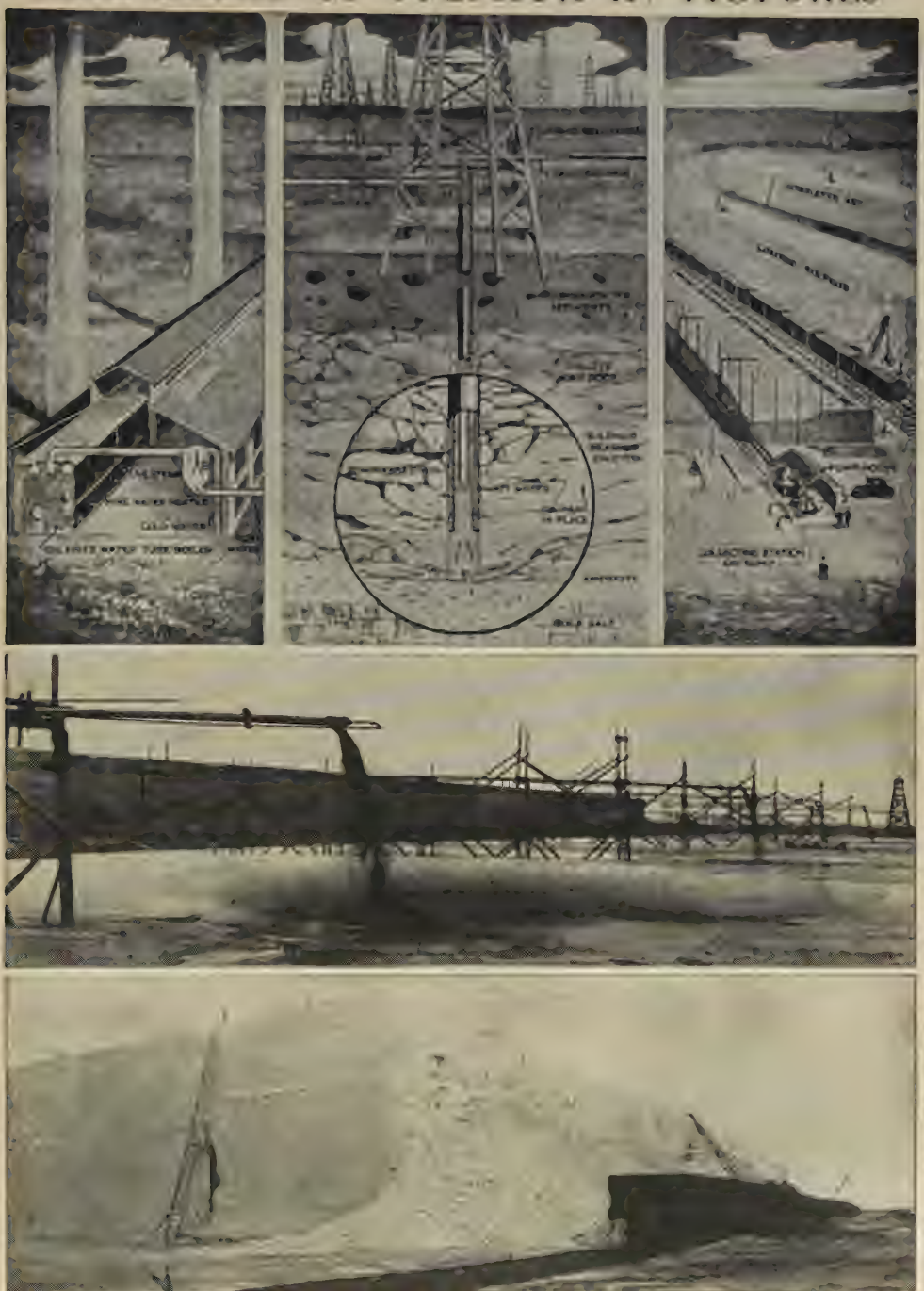
### Some of the Many Uses of Sulphuric Acid

The chief use of sulphur is in the production of sulphuric acid, perhaps the most important chemical agent in use. Sulphuric acid is used in the manufacture of fertilizers, explosives and paints, in oil refining, dyeing, the manufacture of artificial silk, in preparing iron and steel for plating or galvanizing, in bleaching, and in the production of other chemicals, to mention only a few of the many uses. Thousands of tons are used annually in batteries for motor cars, motor boats and radios. Films for motion picture and other cameras require a large amount. Calcium arsenate, used in fighting the boll weevil, is indirectly derived from sulphuric acid. Sulphur and sulphuric acid are also used in the manufacture of certain kinds of paper, and the rubber industry uses many tons. In fact, sulphur is one of the fundamental needs of modern industry.

Much of Texas lies over great deposits of clay of many sorts. From them are made brick, tile, terra cotta, sanitary

The teams are bringing out the quicksilver ore from the Waldron mine in Brewster County. Texas is usually second only to California in the production of this liquid metal.

# THE STORY OF SULPHUR IN PICTURES



The diagram at the top tells the story. A large pipe is driven down to the sulphur deposits. Very hot water is pumped in and melts the sulphur, which collects in the bottom, as it is heavier than water. Compressed air forces the liquid sulphur to the surface, where it is pumped into great wooden vats. The middle picture shows the liquid sulphur flowing into the vats, where it soon hardens. At the bottom the wooden sides have been removed and pieces from the solid block of sulphur are being loaded into cars.

Diagram © Texas Gulf Sulphur Co. Inc.

ware, pottery and statuary or other ornamental forms. Deposits have been worked in about seventy-five counties. In 1926 the value of these products was over six million dollars, and the industry is growing.

Kaolin is a special form of clay particularly suitable for the manufacture of fine porcelain, and must be without impurities. Our manufacturers of tableware have been obliged to import their supplies from Europe. However, kaolin of good grade is known to exist in several counties of Texas and the deposits in Real County have attracted considerable attention. These deposits may be the basis of a great industry in the future.

Photograph, courtesy Alpine Chamber of Commerce.

**Brewster County has enormous quantities of excellent marble. This quarry near Alpine is easy to work as the whole mountain is marble and all that is necessary is to split off blocks of the size desired.**

## EXCELLENT BUILDING MATERIALS FOUND IN TEXAS

In another place you are told that cement is made from lime and clay burned together. Texas has great quantities of both, and there are cement plants at Dallas, Fort Worth, San Antonio, Houston and El Paso. The value produced in 1926 was nearly ten million dollars, and the industry is also growing. The uses of cement are multiplying, but the amount needed for roads and bridges alone will keep many establishments busy. The mileage in cement roads is being increased every year, and when people fully realize the ease and comfort of good roads, the demand for them will grow stronger.

Texas has large quantities of some excellent building stones. While most of the limestone quarried is used in the production of cement or lime, much is also used for building. Limestone is found in many counties in Texas, but is chiefly worked in a broad belt extending from the Red River about Denison to San Antonio, and below. There is also limestone in the Edwards Plateau, and elsewhere. Sandstone is found in many counties and many quarries satisfy the local demand for a cheap, easily worked stone. Perhaps the best quality now worked is in Ward County.

Marble of good quality is found in the Central Mineral Region, in the Edwards Plateau, and across the Pecos, but there are few active quarries, largely because of poor transportation facilities.

The supply of granite seems almost inexhaustible. There are mountains of granite in the Central Mineral Region. Stone from Granite Mountain in Burnet County was used to build the capitol, and also the Galveston sea-wall. There are other quarries in Llano and Gillespie counties, and across the Pecos are great deposits. It is found in pink, gray, and opaline tints, and the production is bound to increase as the need grows and trans-

portation improves. This is also true of the marble industry.

### WHY TEXAS CAN HAVE GOOD ROADS

There are other building materials in the state. There is excellent rock for road-building, and the amount of building-sand and gravel is unlimited. There is rock asphalt, or natural asphalt, in several counties, but it is chiefly worked in Uvalde County. It is excellent for road-building. Asphalt produced in the refining of petroleum is also used for various purposes.

Though you are told in The Book of Knowledge that sand is the principal ingredient of glass, not all sand is suitable. There is a considerable quantity of "glass sand" in Texas, and there are factories at Wichita Falls, Texarkana and Three Rivers. There are also large deposits in Harrison, Eastland and other counties. Cheap fuel in the form of natural gas is an advantage in glass manufacture.

Inside the Waldron Quicksilver Mine, Brewster County.

Besides coal and lignite, other forms of carbon are produced in Texas. There are graphite mines in the Central Mineral Region, and a large mill in Burnet County sends its product chiefly to manufacturers of batteries. Carbon black, made from the waste natural gas of the oil fields, is used in the manufacture of tires.

### THE SEARCH FOR POTASH SHOWS PROMISE OF SUCCESS

Potash is one of the most valuable of all mineral compounds, both in agriculture and in the chemical industries. Germany has had in the past almost a monopoly of potash, and since the World War vigorous efforts have been made to discover supplies elsewhere. Thin beds of potash salts have been found in drilling for oil in Texas, and Congress made an appropriation to cover the cost of drilling test wells in Texas and New Mexico during a period of five years. In 1928 it was announced that four wells in West Texas had shown beds of potash at varying depths, and that two of them have possible commercial importance. The 1,945-foot well in Ector County shows eight beds, but the two richest, with a combined thickness of six feet seven inches, are below 1,935 feet. Another well in Upton County also shows promise. It is hoped that other wells will show thicker beds at lesser depths.

Years ago fuller's earth was much used for cleaning purposes in the manufacture of cloth. Now it is principally used in refining oils. Both cottonseed oil and lubricating oil are often filtered through it to remove unpleasant odors and coloring matter. There are extensive deposits at Riverside, Walker County, in Grimes, Washington, Burleson, Fayette and Bexar counties, and perhaps elsewhere. The yearly product is worth several hundred thousand dollars.

Another valuable product is gypsum, worked principally in the western part of the Central Plains region from Hardeman County to Sterling, though there are great

deposits both of earth and of rock across the Pecos and elsewhere in Texas. Gypsum is largely used in making plaster board for partitions, roofing, cement and plaster-of-paris, and also in agriculture. Every grade of gypsum may be found, and the value in 1926 was over four million dollars.

Gypsum and salt are often found together, and the salt deposits of Texas are likewise enormous. As various parts of Texas slowly rose out of the sea, great lakes were formed and the evaporating water left the salt behind. When drilling for oil in both East and West Texas, thick deposits of salt are often found, and they are sometimes a thousand feet thick. Texas could supply the nation, perhaps the world, with salt. The principal plants are at Grand Saline and Palestine.

Dozens of other minerals found in Texas are not mined to any great extent. In some cases the deposits are small; or lack of transportation and distance from markets may prevent profitable mining. There is considerable mica across the Pecos, but it is little worked. Borax also exists in this region. Ichthyol, a mineral oil used in medicine, is obtained from rock in Burnet County. Some semi-precious stones, as amethyst, agate, onyx, and opals, have been found, and also freshwater pearls.

### PETROLEUM MORE IMPORTANT THAN ALL OTHERS

All of these minerals, important as some of them are, and as others may be in the future, are overshadowed by the greatest Texas product, petroleum and its products, which employs thousands of people and has brought enormous wealth to the state. Many who were poor have become rich, villages have grown into cities, and in some cases, cities have sprung up in the prairie.

Though the word petroleum means "rock-oil," it is not generally believed that it is of mineral origin. Most geologists think that when mud, sand and gravel were washed down into the sea millions of sea plants and tiny animals were buried, and as they decayed, formed oil in the porous rock. Later the floor of the sea was raised, and became dry land. Often salt water, oil and gas will be found in layers, as shown in the diagram of an oil field.

If the dome over the gas is pierced we have a flow of natural gas. If the hole strikes the oil one of two things may happen. If the gas in the dome over the pool has been much compressed, it expands and the oil is driven to the surface in the form of a "gusher." After a time the force of the gas may no longer be sufficient to drive the oil to the surface,

This diagram illustrates how gas, oil and water often occur, and also how boring deeper may restore a field which had ceased to produce. As you see, the oil floats on the water, and the gas collects above the oil. A well driven in this field might strike only water, while a well a few rods away might bring in oil or gas.

Photograph, courtesy United States National Museum.

# WHEN A GREAT GUSHER COMES IN

Photograph, courtesy Ft. Worth Association of Commerce.

After the drill has been driven down steadily for weeks or even months, then the great moment may come. The oil may spout high into the air. Unless it can be capped at once much oil will be wasted. This is a gusher near Breckenridge, Stephens County, one of the richest oil sections of the state.

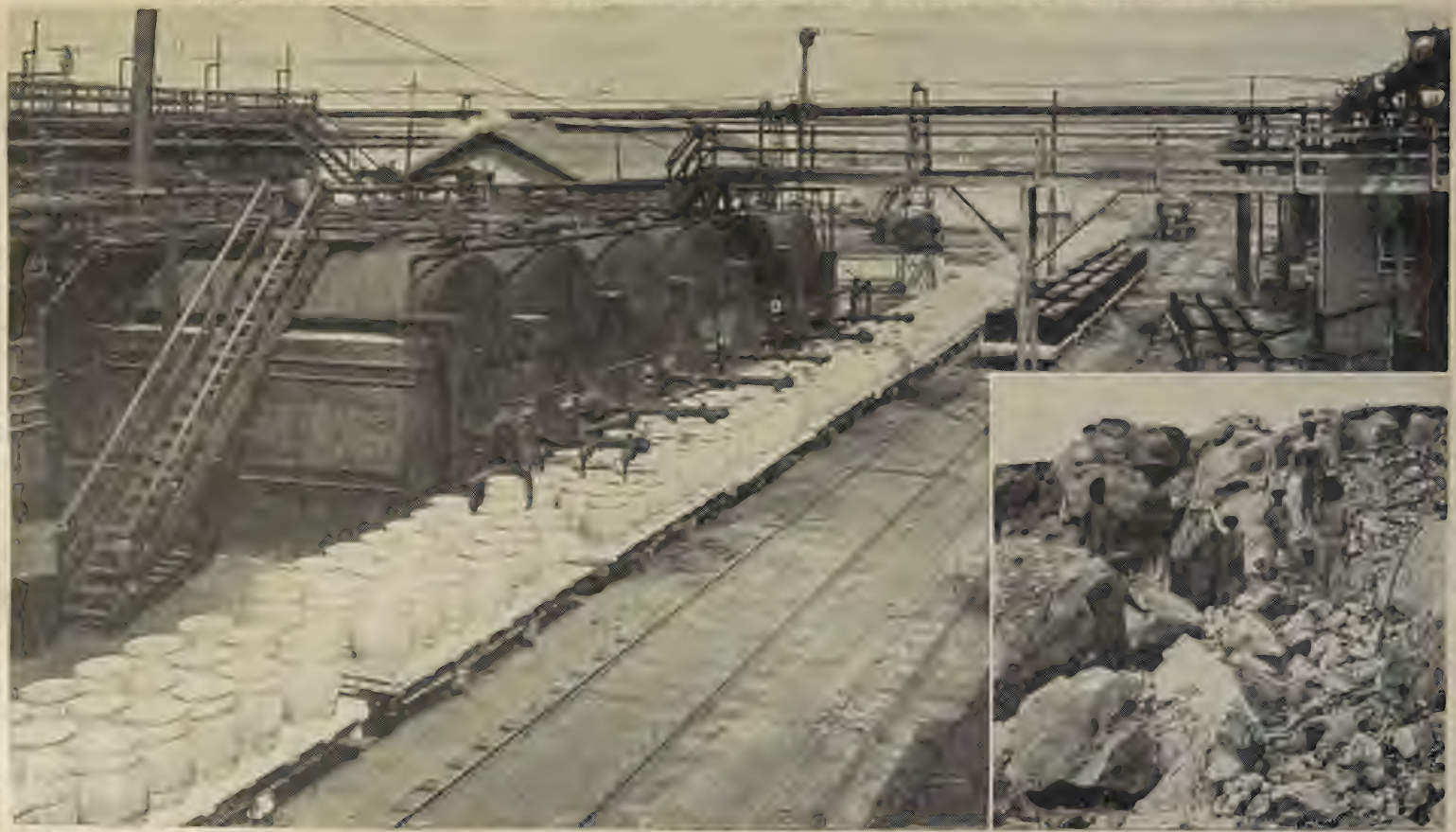
# THE OIL STARTS ON ITS JOURNEY

In almost every part of Texas derricks stand on the horizon like forests of blasted pines. Each one of them houses a drill which is steadily driven into the earth. The well beneath each may turn out to be a "dry hole," or it may be a source of enormous wealth. This is a field near Ft. Worth.

In the early days of the industry in Pennsylvania, the oil was taken from the field in barrels. Then some one conceived the idea of pipe lines through which the oil might be pumped to the refineries. Now there are thousands of miles of pipe lines. Here we see pipe lines being strung across the Neches River.

Upper picture, courtesy Ft. Worth Association of Commerce; lower, Texas Company.

# TWO SOURCES FROM WHICH ASPHALT IS OBTAINED



Much Texas oil contains asphalt, which remains after the lighter naphthas and oils have been driven off at the refinery. Here we see it being drawn into barrels at Port Neches. Natural or rock asphalt is found in many parts of Texas. This mine or quarry is in Uvalde County.

Photographs, courtesy Texas Company and Brewster County Chamber of Commerce.

and pumps must be used to bring up the oil. Sometimes the force of the gas is not strong from the beginning, and pumps must be used at once. After a time the pumps may begin to bring up salt water, showing that the oil is exhausted. This is happening in many of the richest Mexican fields and also in some of the Texas fields.

### How a declining field may be brought back

Sometimes there are other pools of oil below the first, which may be reached by drilling deeper. Some fields which seemed to be exhausted have been renewed by drilling the wells down to the lower pools. Spindle Top is a good example. It is possible that many abandoned or declining fields may again produce large quantities of oil. Some of the wells in Texas are over a mile deep.

What is this petroleum? The scientists say that it is a mixture of various hydrocarbons. A hydrocarbon is a compound of carbon and hydrogen in varying proportions. Some hydrocarbons are gases, some light liquids, as gasoline, some heavy, as lubricating oil, and some are solids, as asphalt. Petroleum is a mixture of many of them, which can be separated by distillation. Often there are impurities which must be removed also. These things are the business of the oil refinery. Petroleums from different fields differ considerably in the number and the amount of the different hydrocarbons. We tell of the process of refining in the chapter on manufactures.

### The first traces of oil seen long ago

Some of the survivors of De Soto's expedition are said to have seen traces of petroleum in Texas in 1543, but not until just after the close of the War Between the States was there any attempt to utilize the oil. About 1868, around Chireno, Nacogdoches County, some shallow wells were sunk, but the production was small. Nearly ten years later another field was discovered near Nacogdoches. A short pipe line was built, but the enterprise was not profitable, and the pipes were taken up and utilized to carry water in Nacogdoches.

**Some of the natural gas in Texas contains the rare element helium, which is used in the government balloons as it is not inflammable. This plant at Ft. Worth has been in operation for years, and a second has been recently established near Amarillo.** Photograph, courtesy Ft. Worth Association of Commerce.

Scattering prospectors sought for oil during the fifteen years following, and wells sunk around Beaumont and Corsicana showed oil. In 1896 the latter town while drilling for water found oil, and in 1900 the Powell field near by was discovered. These fields were steady though not large producers, and sinking deeper wells has added greatly to the production.

The great discovery which put Texas in the front rank of producing states was the great Lucas gusher at Spindle Top, in the Beaumont district. Oil spouted 160 feet high, and the well could not be

controlled for ten days. During the first year this mound produced nearly eighteen million barrels of oil. The oil world went mad. Men flocked to Texas from all parts of the world, and many wells were sunk. Other fields near by, Sour Lake, Batson, Saratoga, were discovered, and farther down the coast, Matagorda, Humble, Dayton and Blue Ridge came in, soon to be followed by many others. When Spindle Top had declined to low production, deeper wells brought back an enormous flow.

### Oil is found in every section of the state

More than a hundred productive oil fields have been found in the state, and we have not space to describe them all. Oil has been found in every section from the extreme east to the far west, and from the upper Panhandle to the lower reaches of the Rio Grande. Some enthusiasts believe that the whole of Texas is underlaid with oil. More than fifty counties were producing oil in 1926, and tall forests of derricks rise in every part of the state. Texas seems to be the world's greatest storehouse of oil.

Recently there has been a phenomenal development in West Texas. Rich fields have been discovered in Hutchinson, Carson, Upton, Winkler, Crane and other counties, and now there are busy towns where there was only the bare range a few years ago. Some of these counties were without railroads and had a very sparse population. In fact Crane was not organized as a county when the first wells were sunk. Hutchinson County had only 721 people in 1921. The city of Borger was estimated to have over 30,000 people on its second birthday in 1928.

In some cases oil refineries have been built near the wells. More often the oil flows through pipe lines to the great refineries on the coast, or it may be used without refining. In 1925, the value of the oil refined was about a hundred dollars for every man, woman and child in the state. While the wealth produced was not distributed evenly, it is a fact that wealth does not stay in the hands of the one who receives it, but tends to become scattered. Then too, many millions were paid in wages, or for supplies of many kinds. Some large factories make only tools for the oil fields.

### The importance of natural gas in manufacturing

Natural gas is often found with petroleum though there are large fields producing gas which have not produced oil. Many towns in Texas use natural gas for fuel in the home, and also in manufacturing, as it can be easily carried many miles through pipes. It is an ideal fuel. Much of the gas is also rich in gasoline, which can be removed without destroying the value of the gas. Nearly two hundred and fifty million gallons of gasoline are yearly obtained from Texas natural gas. Some of the Texas gas wells also contain small quantities of the rare gas, helium, which is used in the government balloons. Though it is not so light as hydrogen, it is safer, as it will not burn. The United States has two plants for the extraction of this gas, one at Fort Worth and the other near Amarillo.

Though the mineral production of Texas, with the exception of oil and gas, is not large in value, production is bound to increase. The state is a great storehouse of minerals, which will be utilized as increasing population and better transportation offer a profitable market.

The Shafter Silver Mine, in Presidio County, has produced over ten million dollars.

# PLANT AND BIRD LIFE OF THE ARID AND SEMI-ARID SOUTHWEST

Photograph, American Museum of Natural History.

**At least 600 of the varieties of birds of the United States have been seen in Texas. Here are a number among the cacti and other characteristic plants of this region.**

Texas Fox Squirrel.

# WILD LIFE IN TEXAS

AUSTIN'S pioneers could easily depend upon their rifles to supply their larders, and to them venison was as much a commonplace as is beef with us. Some good hunting is still to be found along the Rio Grande and elsewhere, though to-day the deer are confined to the game preserves save in the less populated regions. There are, however, several varieties to be found, together with pronghorns, a few bears, and an amazing number of the smaller mammals of both the southern and southwestern types. The arid regions contain more varieties of reptiles and fiercer specimens than most other portions of the United States.

As for birds, there are not alone those distinctly characteristic of the southwest, but in the more humid portions of the state, representatives of most of the feathered familiars of the north, east, south and west. Many of the great bird migrations cross Texas on their way to or from South America. Other chapters describe the plant life on which most of the fauna of the state depend for their living. The millions of insects, whether of the dry sunshine of the Texas day or the star-strewn night, have their foes.

Of the buffalo that once filled the plains there remains a herd of pure bred buffalo and one of half-breed "cattaloes" on the Goodnight ranch in the Panhandle, a portion of which has been made into a park.

A few mountain sheep, Texas Bighorns (*Ovis canadensis texiana*), buffy gray creatures with white rump patches, remain in the Guadalupe Mountains, and public-spirited ranch owners there and elsewhere in the state are trying to protect the native wild life—other than that harmful to agriculture or dangerous to human life—from extermination by unscrupulous hunters. Mexican Bighorns (*Ovis mexicanus*) also come into the canyon of the Rio Grande from the Mexican side.

Some of you have seen the antlered gray-brown shape of a deer go bounding in mammoth leaps through the brush. More often you have spied only the flash of the upturned white flag of a tail. It is these shy creatures that provided the pioneers with buckskin for their hunting shirts and the staple food of the wilderness for their tables. Two forms of the Virginia, or White-tailed Deer, occur in Texas.

The Texan White-tail (*Odocoileus texanus*) is found both east and west, but the smaller, paler Sonora Deer (*Odocoileus couesi*) is found only in the extreme west.

The Mexican Mule Deer, or Black-tail (*Odocoileus hemionus canus*), with his heavier body, large ears and pronged antlers, has been all but hunted out of the Big Bend, though a chain of game preserves has been established in the Davis Mountains to avert his extermination. His mammoth bounds were once the commonest sight of the plains.

The Pronghorn Antelope (*Antilocapra americana*), a small, graceful species in which even the female wears small curved one-prong horns, shed annually, is still sometimes found on the plains of West and South Central Texas. Taking the state as a whole, the best deer hunting is to be found from Mason County southward and along the Rio Grande in a belt not over a hundred and fifty miles wide.

One other hoofed mammal is found within state borders, the Muskhog or Collared Peccary (*Pecari angulatus*). This stubby, nearly tailless, grizzly-hued pig of musky odor is the same that the pioneers found ranging everywhere in small bands. To-day it is rare even in the southwest, where dense thickets afford it a measure of protection from wolves and jaguars. A band of thirty bristly-maned tusked hogs brought to bay by the dogs still furnishes good sport. Peccaries search in the soil for roots, in addition to eating nuts, fruits, toads and reptiles.

### Bobcat, ocelot, mexican cougar, jaguar and jaguarundi

Texas has several members of the great cat family, and two or three are seldom or never seen elsewhere in the United States. One is the Jaguarundi (*Felis cacomitli*), a long-tailed cat with a long body and short legs, a good fisherman as well as a clever mouser that takes shelter in thick catclaw and other underbrush. Both gray and reddish phases are found. The larger Jaguar or American Leopard (*Felis hernandesii*), with his tawny, black-spotted fur and his fearsome, hoarse, coughing bark, warily hunts through the dense thickets of the Big Bend, but is seldom seen. The Mexican Cougar (*Felis oregonensis azteca*), otherwise known as the puma, panther or mountain lion, a long, lithe, sand-colored beast capable of mammoth leaps, lives chiefly in the wilds of the Big Bend country.

The small Texas Bobcat (*Lynx rufus texensis*), with his tawny reddish back and his underparts heavily spotted, is found occasionally in eastern and southern Texas, while the Plateau Bobcat (*Lynx baileyi*) is found oftenest in the north and west. Finally, the Ocelot (*Felis pardalis griffithii*), known also as tiger-cat or leopard-cat, may be seen in the brushy regions of the Rio Grande Valley. You would never mistake one for just a large house cat, because his tawny fur is so strikingly marked with black spots and lengthwise stripes on his back. He does his hunting at night, stalking and capturing more than enough wood rats and rabbits to pay for the hens he occasionally steals from their roosts. He is also a good snake killer. Timid where humankind is concerned, he will go scampering up a tree at your approach.

### Wolves and coyotes still a menace to sheep and goats

Texas has several animals of the dog family. The fleet and cunning yellow prairie wolf (*Canis nebracensis texensis*) was named coyote because of the Spanish name for him, *coyotl*. He is somewhat smaller than the northern coyote. Less inclined than the larger wolves to run in packs, he more often hunts with his mate or takes the youngsters along. His keen nose is capable of leading straight to a quail's nest, and the little pest loves to go through a watermelon patch, plugging the ripest specimens. The litter may contain ten or even more puppies, and they are so easily tamed that the Indians used to keep them as dogs. No one who has camped on the plains but has heard their nightly chorus of high-pitched sharp barks, followed by a series of yelps that run into a wailing howl. Coyotes are so destructive to live stock, so addicted to killing newborn calves and lambs and little pigs, that the Federal Government has taken measures to exterminate them. They are also subject to rabies, and when they go mad will attack even children, but like the wild cats and some other beasts and birds, they also destroy the rats, rabbits and prairie-dogs destructive to a settler's crops. They are numerous from Nueces Bay northward. Two or three other species or subspecies are seen in Texas. The Mearns Coyote (*Canis*

*mearnsi*) is more brightly colored, and the Small-toothed Coyote (*Canis microdon*), a Mexican species, is found in the lower Rio Grande region.

The larger and fiercer Gray Wolf (*Canis nubilus*), once common on the plains, has not been entirely exterminated, and the Texas Red Wolf (*Canis rufus*), a smaller species, is more common in the southern part of the state. Wolves have, however, been pretty thoroughly kept out of large areas of the ranch country by several thousand miles of wolf-proof fences. Such a menace have wolves and coyotes ever been to sheep and goats, and especially to lambs and kids, that herdsmen have long been organized into clubs for wolf extermination.

The cacomistle is called by a half-dozen names, as coon-cat, civet-cat, ringtail. It is a beautiful little animal which seldom moves except at night. It eats birds, smaller animals, insects and, occasionally, fruit. This photograph and that on page 137 by Elwin R. Sanborn.

Thousands of dollars' worth of damage have been done by these "varmints" in Brown, Comanche and Burnet Counties.

### Foxes of East Texas and of the Plains

Both red and gray foxes are found in Texas. There are two of the small kit foxes, the Swift (*Vulpes velox*) and the New Mexico Desert Fox (*Vulpes macrotis neomexicana*). Both are creatures of the plains. The Florida Gray Fox (*Urocyon cinereoargenteus floridanus*) is found in East Texas, but his place is taken in West Texas by the Arizona Gray Fox (*Urocyon cinereoargenteus scotti*). The ears and tail of the first named are shorter than those of the second. None of the Texas foxes is as cunning as the more northern species. The common red fox has also been introduced into Texas.

### The Bear, the Raccoon and the Ring-tail Coon-cat

That clown of the woods, the Black Bear, is not yet extinct in the less settled parts of Texas. The Louisiana Black Bear (*Euarctos luteolus*), found in the east, is usually black, while the New Mexico Bear (*Euarctos americanus amblyceps*) is inclined to be brown. It is rather common in some parts of the Trans-Pecos region.

Raccoons are rarely glimpsed, in their little black masks, along the margins of streams, lakes and bays where there is natural cover for them, though they make many a moonlight expedition in South Texas after corn and clams, crabs, mussels, frogs and crawfish, and in the fall, mesquite pods, fruit and acorns. The Texas or Brown-footed Raccoon (*Procyon lotor fuscipes*) is the largest of all the "coons." In the west it grades into the Mexican Raccoon (*Procyon lotor mexicanus*).

The ring-tailed Texas Cacomistle or Coon-cat (*Bassariscus astutus flavus*), wrongly called the Civet Cat, is a curious creature with a raccoonlike tail, big ears, a fox nose and frightened looking big cat-like eyes. Like the raccoon, it is fond of fruit, as well as meat, though it gains a part of its living by catching insects. It can still be found in western portions of the state.

### Weasels That Can Follow a Rat into Its Hole

There are thirty-six species and subspecies of weasels in the United States. Of these, the commonest in southern Texas is the large Bridled Weasel (*Mustela frenata*). With his slim, gliding body that can insinuate itself into a rat hole, he finds good hunting in the farmer's fields and granaries where so many mice and rats abound.

The large buffy Black-footed Ferret

(*Mustela nigripes*) is really a large weasel. He wears a black mask across his eyes, for he is a highwayman of the plains, killing in a murderous fury, and drinking the blood of his victims, which are sometimes mammals much larger than himself. He is often found in regions inhabited by prairie-dogs, for he makes his home in the burrows the inmates of which he has killed. Sometimes a pair of blood-thirsty ferrets will clean out a prairie-dog town and leave it utterly deserted. When hunters approach, these ferrets have a way of turning their heads this way and that on their long necks as if trying to see the enemy; and when cornered, they will hiss and spit like cats.

The Common Mink (*Mustela vison mink*) might be called a water-loving weasel. It finds East Texas a happy hunting ground, and destroys much animal life—fish, frogs, snakes, rats, mice, rabbits, birds and domestic fowls. Its fur is highly prized.

The Texas or Mexican Badger (*Taxidea taxus berlandieri*), a grizzly cousin of the weasel, is a flat-looking, long-furred misanthrope with powerful digging claws. He still finds the western half of Texas reasonably "healthy." He differs from the common badger of the north chiefly in color.

### EIGHT SKUNKS, STRIPED, SPOTTED AND HOG-NOSED

Texas has something like eight species or subspecies of skunks. The larger striped skunks are represented by the Louisiana Skunk (*Mephitis mesomelas*), a rather small animal found in eastern Texas, and the larger subspecies, the Long-tailed Texas Skunk, found in South and West Texas. The small spotted skunks belong to a different genus. Texas has three of these (*Spilogale interrupta, indianola* and *leucoparia*). The first is found in East Texas, the second on the coast and the third in West Texas. They eat quantities of insects, though not averse to dining on young ground squirrel, with birds' nest soup and a dessert of infant lizard. Nor will they scorn clams or the fruit of the cactus. They are good mousers, and farmers of the remoter regions can testify that the handsome little "kitties" can actually remove the chicks from beneath a hen without her knowing it. They are like the larger species of skunk in their chief method of defense, and the dog that corners one needs a gas-mask. Indeed, if you find a skunk in a trap, you had better vacate his neighborhood on the run. Nor is this the worst that can be said of him: the spotted skunk is often bitten by a coyote with rabies, and during the attack of madness that follows, has been known to bite a sleeping camper. The graceful skunk kittens play as merrily as domestic kittens.

The hog-nosed skunks, so-called because of the shape of their noses, are larger, and have one broad band of white along their backs instead of stripes. The type is the Mearns Hog-nosed Skunk (*Conepatus mesoleucus mearnsi*) found in western Texas, but a subspecies is found on the coast, and another, a little farther to the north.

The Yellow-haired Porcupine (*Erethizon epixanthum*), the bark eater whose barbed spines protect it from the jaws of its enemies, is rarely seen in wooded portions of the Davis Mountains.

The list of plantigrades also includes the moles in lavish abundance. There is a mole for each of the great geographical divisions of the state. The Texas Mole (*Scalopus aquaticus texanus*), found from Matagorda Bay to Cameron County, is smaller than the plains varieties, being but five and a half inches in length.

### A POUCHED MAMMAL AND AN ARMORED ONE

The typical Virginia Opossum (*Didelphis virginiana*) found over the eastern half of the United States, extends his range into Texas, but the more characteristic Texas Opossum (*Didelphis mesamericana texensis*), that ranges southward from the coast region into Mexico, occurs in both a gray and a black phase. The Florida Opossum is also seen in East Texas.

The Texas Nine-banded Armadillo (*Dasypus novemcinctus texanus*), that odd shell-covered mammal the size of a heavy house-cat, sometimes leaves the corrugated trail of his ridged armor and dragging tail in the mud in South Texas, while digging out insects with his huge claws. When molested, he calmly rolls up tight, impregnable to the attack of smaller animals.

### AN EXCELLENT JUMPER OF THE BROAD PLAINS

Of jack rabbits, Texas has three, one for nearly every quarter of the state.

The name "jack" was given them because of their tall, burro-like ears. The Great Plains Jack Rabbit (*Lepus californicus melanotis*), that ranges the plains throughout east central and northern Texas, is distinguished by the broad black band from rump onto tail, and by his bright yellowish buff fur with its wash of black and the whitish rump patch. The Texas Jack Rabbit (*Lepus californicus texianus*), of arid western Texas

The Jack Rabbit at home.

south of the Panhandle, has upper parts of a pale buffy gray, with rump patch of whitish gray, save when he goes leaping away and shows his white underparts, a distinguishing mark. The Merriam Jack Rabbit (*Lepus californicus merriami*) is found throughout southern Texas from the prairies near Trinity River to Del Rio and above on the Rio Grande, and as far north as Mason and Antioch. A dark brownish buff above, he is pure white underneath and has gray hind legs and rump patch.

Young jack rabbits are born with their eyes open and their ears alert for their many foes from which, only a little later, their long hind legs must rescue them; for coyotes, hawks, owls, wild-cats and humankind hunt them without ceasing. They sleep in forms or shallow depressions in the dust or grass, with their ears laid flat, and thanks to their protective coloration, they frequently escape detection. They are enormous feeders and display entirely too great a fondness for crops. Moreover, they can outrun any dogs save a greyhound. This has led the farmers into erecting rabbit fences and conducting co-operative rabbit drives. A woven wire rabbit corral is built with wing fences leading into it, and on the appointed day everyone in the community comes out, forming a line perhaps miles long, to beat the brush and scare the creatures in the right direction. Thus rabbits are captured and killed by the thousands.

Of the smaller cottontails, Texas has at least eight species and subspecies, of which three are found nowhere else. Generally the three subspecies of the Florida Cottontail (*Sylvilagus floridanus*) are larger than those of the Western Cot-

tontail (*Sylvilagus auduboni*). There are two Marsh Rabbits (*Sylvilagus aquaticus*). These are larger and darker than the rabbits of the uplands or the plains. There is also a large Mountain Cottontail (*Lepus pinetis robustus*) high in the timbered portions of the Davis Mountains.

### Some interesting ways of rats and mice

Texas has at least eight kinds of kangaroo rats with the short fore legs and long hind legs of the kangaroo and the extraordinary long tail so well adapted to balancing a lengthy jump. Taking a medium-sized specimen as the type representative, the Ord Kangaroo Rat (*Dipodomys ordii*) is a deep buff rodent nine and a half inches long from nose to tip of tail, and we do not dare to risk our reputation by telling you how many times his own length he can hop, with his little fore legs folded against his breast, never touching the ground at all. He possesses the advantage of requiring no drinking water and thriving on a diet of young cactus plants. He also likes grain and weed seeds, and a number of creatures from snakes to owls are fond of him. He colonizes, and if you come upon a rat town, which you will know by the little mounds of sand or soil thrown out of the tunnels as his fellow townsmen tunnel their burrows, it will pay you to sit perfectly still some moonlight night and watch. Sleeping by day, they all fare forth at night, gathering food supplies which they carry home in their cheek pouches to store for the time when seeds will be scarce. Their underparts are white, and their thighs are marked by a clear band of the same color. Moreover, upon close examination, you will see that their tails have two white stripes. Their feet also are white.

### Pocket mice, white-footed mice, harvest and grasshopper mice

It is a good thing for a state as large as Texas that it does not have all its mice rolled into one, for the composite creature would be appallingly huge. There are more than a hundred species and subspecies of mice in the United States, and Texas has many kinds, including house mice, pocket mice, white-footed mice, harvest mice and grasshopper mice. The pocket mice are characterized by their external, hair-lined cheek pouches and resemble the kangaroo rats in smaller size. The Hispid Pocket Mouse (*Perognathus hispidus*) may be taken as representative, as it is found throughout southern and western Texas. Its fur is harsh, but not spiny. Of the white-footed mice, the Texas Gray Wood Mouse (*Peromyscus texanus*) of the south and southwest, has a name that speaks for itself. The nimble Harvest Mouse (*Reithrodontomys humulis*), of which several species and subspecies inhabit as many geographic divisions of the state, closely resembles the house mouse but lives on grain and wild green vegetation and can often be seen climbing grain stalks. The Grasshopper Mouse (*Onychomys leucogaster*) is a chunky, short-tailed rodent, furry soled, and white on its underparts. Often it makes its home in the abandoned burrow of a prairie-dog. Despite its name, it will eat almost anything from a live baby lizard to a dead scorpion. At dusk it utters a tiny high-pitched whistle.

### Cotton mouse and rice rat that live high in Texas

The gnawers that most interest the cotton farmer are the Texas Cotton Rat (*Sigmodon hispidus texianus*), of the eastern half of Texas and the region around San Antonio, and the Rhoads Cotton Mouse (*Peromyscus gossypinus*) of the lowlands of East Texas, both of which love the seeds and the roots of cotton plants. The rice growers have to grow crops on shares with the Texas Rice Rat (*Oryzomys palustris texensis*).

### Ground squirrels and chipmunks that inhabit a variety of places

Texas has ground squirrels large and small, dwellers of the plains, the desert, the prairie, including those that go into a long hibernation and those that scarcely hibernate at all. They are alike in eating seeds, nuts, birds' eggs and insects. Sometimes called gophers, they are all short-tailed burrowers that store seeds and grain, pecan nuts and bits of garden vegetables for use in late winter and early spring. The list of ground squirrels includes rock squirrels and chipmunks, and—surprisingly enough—prairie dogs.

The Texas Striped Ground squirrel (*Citellus tridecemlineatus texensis*) of northwestern Texas, is a chestnut-colored little fellow with buff stripes down his slender back. He has a birdlike chirp as well as an alarm whistle, and every boy knows how suddenly he will disappear into his burrow, then how his head will

come popping up a minute afterward to see what is going on. He works diligently carrying stores to his underground cellars. The Texas Antelope Squirrel (*Ammospermophilus leucurus interpres*) is a desert chipmunk with one distinguishing mark that he shares with no other squirrel, his jaunty upturned tail carried close against his rump. The white underside reminded the first person to name him of the white rump patches of the antelope. His chirp is birdlike and he trills musically as he scurries over the sands, a tawny, protectively colored mite with a light stripe down each of his sides. Unlike most ground squirrels, he has a habit of scuttling up a tree trunk for a view of an approaching intruder. He is considered a pest by the farmer by reason of his fondness for digging up corn as soon as it is planted.

Of rock squirrels there are three in Texas. The Colorado Rock Squirrel (*Otospermophile grammurus*) is a dusky or grizzly gray brown animal the size of the gray tree squirrel save for his narrower tail. The Texas Rock Squirrel of the southern and western part of the state differs in being a glossy black from nose to rump, though grizzled underneath. The Couch Rock Squirrel of the Davis Mountains and the canyons of the Pecos River is usually a dark gray with a black head.

The Gray-footed Chipmunk (*Eutamias cinereicollis canipes*) is the one of the fifty-seven varieties of the genus *Eutamias* that inhabits the Guadalupe Mountains.

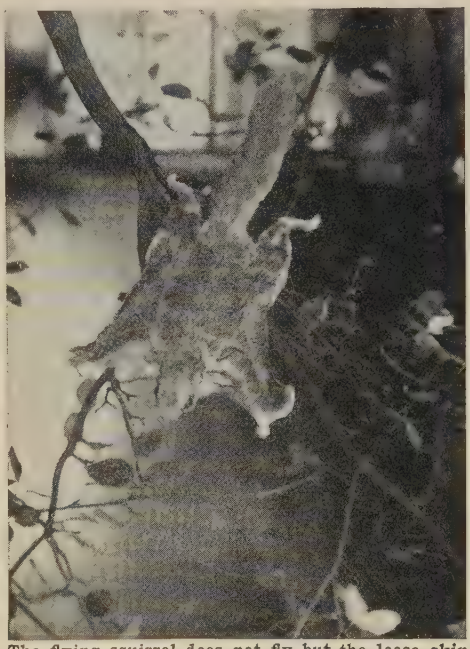
### The prairie-dog and his interesting community life

The Black-tailed Prairie-dog (*Cynomys ludovicianus*) is common in the plains region, while a subspecies, the Arizona Prairie-dog, an unusually large, deep-colored specimen, still abounds in Southwest Texas. Children sometimes propound the question, when is a dog not a dog, the answer being, when he is a prairie-dog, for the truth is that this stubby creature, with body as heavy as that of a small woodchuck and nearly tailless, is really a barking ground squirrel. The group is found nowhere in the world save in the western part of the United States. Almost everyone who has traveled on the plains has seen a "dog town," with its residents nibbling vegetation or sitting like little stumps at the doors of their burrows. A piercing chirp from the first one to see your approach is an alarm signal that is relayed from one to another of the colony, but as all dash for cover, they are apt to pause curiously for a last backward look at you. The prairie-dog is a fat, short-legged fellow equipped neither to fight nor to run far or fast, and his natural enemies are many. Eagles and the larger hawks snap him up as a choice tidbit, coyotes pursue him, badgers dig him out, black-footed ferrets race into his hole and drag him forth, while the burrowing owl considers baby prairie-dog such a delicacy that he fairly haunts "dog towns." Rattlesnakes come visiting and swallow the young "dogs," an entire family at a time, then go to sleep in the nursery and snooze for days until the meal is comfortably digested and a new appetite created. Despite all of these perils, families are large and enough "dogs" escape to maintain towns often miles in extent.

Texas has fifteen gophers. One of the commonest, the mesquite plains pocket gopher (*Geomys breviceps llanensis*) is a large, light-colored gopher that tunnels in the strips of sandy soil of the semi-arid bottomlands of the larger rivers almost to the Staked Plains.

### Tree-dwelling squirrels with tails that help them balance

The tree dwellers include gray and fox squirrels and flying squirrels. The Southern Gray Squirrel (*Sciurus carolinensis*) is the one commonly seen in city parks. The Texas Fox Squirrel (*Sciurus niger limitis*), occasionally found by the huntsman of western Texas, is a larger squirrel and distinguished by a yellower coloring and underparts of orange-buff. The Texas Flying Squirrel (*Glaucomys volans texensis*) is a timid, night-loving little creature of which you will be fortunate to catch even a glimpse in the heavily-wooded portions of East Texas. It is a pretty thing, with large eyes and soft light brown fur, the underparts verging on a pinkish cinnamon. It spreads its "wings," those lateral folds of skin that extend from its forearms to its ankles, and launches itself silently from its tree top, to come drifting down to a lower branch. To return, however, it must climb. This species is found only in eastern Texas and western Louisiana.



The flying squirrel does not fly but the loose skin connecting the front and hind legs does enable it to glide from a higher to a lower level.

### MAMMALS OF THE STREAMS AND COASTAL WATERS

There are three muskrats in Texas, but the one chiefly trapped is the Louisiana Muskrat (*Ondatra rivalicia*) found on the streams of East Texas. It looks much like a barn rat except that it is about four times the size. As you know, its feet are webbed for swimming and its tail flattened to serve as a rudder, while its vital organs are protected from the chill of the water by fur as thick as a beaver's. When dyed, this fur is known as Hudson seal or river mink. You may have seen the muskrat villages of mud tepees three or four feet high built on tepee poles of reeds and plant stems. Though the nursery floor is above water level, at times of flood the young are likely to be drowned. The muskrat, unfortunately, sometimes makes its home in the bank of an irrigation ditch, in which case its tunnels may do serious damage.

A closed season of ten years is saving the beaver and the otter found in Texas. The large Carolina Beaver (*Castor canadensis carolinensis*) and the Texas Beaver were formerly trapped in East Texas. The Rio Grande Beaver (*Castor canadensis mexicanus*) but rarely fells a log along the river that forms the Mexican boundary.

The Carolina Otter (*Lutra canadensis lataxina*) sometimes leaves web-footed tracks on the river banks where the fishing is good, but is now almost extinct.

You have read of the Manatee (*Trichechus latirostris*), that naked, pseudo-whalelike mammal with sleek head and wrinkled skin that inhabits the Gulf of Mexico and sometimes ventures up the tidal rivers, coming close to wharves and boat landings to feed on the herbage of the bottomlands. It is a rare sight to see a manatee cow when she rises to the surface and with her handlike flippers holds her nursling to her breast. At times, late in summer, great herds of manatees will be sighted rolling and flapping about.

### BAT HOUSES AT SAN ANTONIO TO ATTRACT MOSQUITO DESTROYERS

Texas has seventeen bats, those tiny mammals of the air of which you have read in The Book of Knowledge. There are red, yellow and hoary bats, little brown bats and big-eared lump-nosed bats. The Mexican Free-tailed Bat (*Tadarida mexicana*) is so small that he can hide in a crevice by day, hanging from his hooked toes with his ears flaring forward over his gnomelike face. It is his presence that gives a musty smell to abandoned houses and churches in western Texas. In the caves of the Big Bend country, these narrow-winged bats will hang so thickly from the ceiling that their thousands of tiny squeaks produce a volume of sound. About sundown, they come pouring out like a cloud of brown smoke and make for the nearest stream to drink. They live on the insects that they catch on the wing. The Cave Bat (*Myotis velifer*) is the largest of the so-called Little Brown Bats, and thrives on the abundant insect life along the southern border of the state. With the idea that bats might prove valuable as malarial mosquito destroyers, high belfries of bat roosts with slat-shaded windows have been built in the suburbs of San Antonio where these odd creatures may find shelter; but whether the desired end is achieved is a matter it would be hard to prove. They do, however, catch and devour insect pests, including a variety of beetles. The olive buff San Antonio Little Bat (*Myotis incautus*) ranges from Bexar County to New Mexico. The Desert Pallid Bat (*Antrozous pallidus*) makes her home in caves

and rock crannies, but she is so nearly free of the musky odor associated with bats that you might never suspect she was there. Like a gnome she floats out at sundown on her wide hooked wings, often with her two babies clinging to her teats, and she is really valuable to the farmer for the grasshoppers and crickets she destroys. The Lump-nosed Bat (*Corynorhinus rafinesquii*) lives in caves and mine shafts, as a rule. It has unusually large ears and a pronounced lump on the muzzle.

### THREE TYPES OF BIRD LIFE, NOT COUNTING MIGRANTS

Texas is so huge, so varied in her geography, and occupies such an important position in the North Amercian continent that she possesses within her boundaries three distinct types of bird life, in addition to the birds that cross the Rio Grande from Mexico which are found practically nowhere else in the United States. The more or less arid plains of the Trans-Pecos region have birds akin to those of Arizona and Southern California, the birds of the desert of cactus and creosote and of the sagebrush plains. The Davis Mountains add species belonging to higher altitudes. East Texas has practically the same bird life as Louisiana, and in addition lies in the migratory route of birds flying from their summer feeding grounds in Alaska and the Great Lakes to their winter homes in Central and South America. The Brownsville region is the meeting place for birds from north and south.

Ducks, geese and brant enter the state with the first "norther" of the autumn, many remaining on the lakes and rivers of East Texas and especially along the coastal islands—within easy distance of the rice fields—for the winter, others proceeding farther south. Texas is the winter home of the luscious mallard and canvasback, the pin-tail, the red-head, the green-wing and the blue-wing teal, the baldpate, the gadwall, and the beautiful wood-duck, as well as the unpalatable red-breasted mergansers, the fulvous tree duck, the snow goose and the Canada goose.

The more familiar birds, from jays to humming-birds and from meadow larks to bald eagles, we have already described in a dozen or more articles in The Book of Knowledge. Since at least 600 of the birds of the United States have been seen in Texas, it would, obviously, take this entire volume to deal with them all, but the guide at the back of the index volume will readily show where to look them up.

### TEXAS BIRDS THAT ARE ALTOGETHER SOUTHWESTERN

Several of the woodpeckers found in Texas are described elsewhere, but two species, the Cactus, Texan or "Ladder-back," and the Golden-fronted ones belong to the southwest. The Cactus dweller has a back, as his nickname implies, heavily barred with white. The Golden-fronted woodpecker of South Texas has a yellowish belly and a golden forehead.

There is a large Cactus Wren, a Stephens Whip-poor-will, distinguished from others of his kind by a white half collar, a light-colored Texas Nighthawk that hunts low to the ground and does not "boom," and a Broad-tailed Humming-bird with breastplate of rose-purple. A bird seldom seen outside of Texas is the Vermilion Flycatcher, whose entire underparts and thick crest are scarlet. In marked contrast is the dingy Dwarf Cowbird. The Scott Oriole, with his black head and brilliant yellow underparts, is also southwestern, as is the Arizona Hooded Oriole, a yellow bird with a black throat, the Black-chinned Sparrow that runs when alarmed instead of flying, and a Desert Sparrow with clownlike white and gray stripes on the sides of its head, contrasting with a large black throat patch.

Of perching birds, there is also a brilliant Western Blue Grosbeak with chestnut-colored shoulders throughout the western half of Texas, and a slender crested black Silky Flycatcher or Phainopepla which you can identify by the white wing patches it shows when it flies. The tiny Least Vireo resembles the Warbling Vireo, and the Grace Warbler is distinguished by a yellow throat and chest and a yellow line over the eye. The Western Mocking-bird has white below and a white patch on the closed wing. The crested head of the Bridled Titmouse of southwest Texas is attired in a striking black and white pattern. His neighbor the Verdin is a little yellow-headed gray bird that makes a pouchlike nest of thorny twigs with its entrance on one side. The Western Gnatcatcher is a slender blue-gray bird with its black tail

broadly edged with white. It builds a nest, if in an oak tree, covered with concealing bits of lichen, or if on a greasewood branch, equally well concealed.

### Game birds that extend their range into Texas

Of game birds other than the waterfowl, we must mention the wild Turkey, of which several subspecies are occasionally found along the streams, especially in the Lower Rio Grande Valley. The best "prairie chicken" hunting is found in the Panhandle and in some of the west central counties. The agile "blue" or Scaled Quail with his whistled "bob-white" is a blue-gray bird with a white top-knot, the black edges to whose feathers give him a scaled appearance. He migrates back and forth along the Rio Grande, penetrating into the Panhandle. The Mearns Quail or "fool hen," with head striped in black and white, is not found save in southwestern Texas. In the central part of the state the types have blended. Wild pigeons are nearly extinct, though the dove is plentiful. There are three Mexican doves along the Rio Grande, the Mexican Ground Dove, the White-winged Dove and the gray Inca Dove, besides the olive-tinted White-fronted Dove. The Mexican pheasant is found along the Rio Grande, besides which numbers are imported. The snipe or upland plover is all but extinct, though the Snowy Plover may be seen amid the débris cast up by the waves.

### Birds that hunt rodents, and sometimes their own kind

Texas has a number of hawks resembling those already described, besides half a dozen distinctively southwestern. There is the Harris Hawk, which you will know because its black tail has a white tip and base, the Zone-tailed Hawk, with three white bands on the under side of the tail, the small Mexican Goshawk, the rare Mexican Black Hawk, and the Aplomado Falcon, besides the Audubon Caracara of the southern tip of the state, a black hawk-like bird with neck white and the feathers of the hinderpart of the head lengthened into a crest. There is also a rare Arizona Spotted Owl.

### The road-runner, a bird with unusual manners

The Road-runner or Ground Cuckoo (*Geococcyx californianus*), found anywhere in the western half of Texas, you will know by his habit of racing swiftly along on foot instead of flying, or coming to a quick halt by upthrusting his tail against the wind. Of course he gets dusty and he looks it. His plumage presents a comically ruffled and disorderly appearance, perhaps because he nests in the cactus and thorny trees. Even his head looks unkempt, because of his bristly crest. But watch him catch a lizard, a centipede or a mouse, or even, we regret to say, any small bird so unlucky as to fall to the ground. Mesquite and catclaw and the giant cactus of the sun-drenched plains provide choice home sites for a variety of feathered settlers.

### Texas birds and game in need of conservation

Owing to periods of drouth, there is only about one season in three, according to the Game and Fish Commissioner, in which conditions are favorable for the breeding of game birds. A law passed by the Thirty-ninth Legislature provides for the purchase of lands for propagation purposes, and the fund for such purchases is made up chiefly from the sale of hunting licenses and fines for violations of the shooting regulations. The state has game wardens whose duty it is to protect the game birds and water fowl, fish and fur-bearing animals, and the deer, and also the streams, lakes, fields and forests as breeding grounds for the non-game birds so helpful to the farmer. The law places a closed season and a bag limit on quail and other game birds, and also upon bear, deer and squirrels. In counties which grow pecans, however, there is no closed season on squirrels. As for the fur-bearers, a law has recently been passed for their protection; it has brought about the sale of over sixteen thousand trappers' licenses.

Though wild life, once so abundant in Texas, was for a time in serious need of protection, thanks to the zeal of the Game, Fish and Oyster Commission, legislation was passed in the fall of 1923 which enabled it to add ten times as many deputies to its working force. Since the strict enforcement of the game laws of the state, deer and antelope, quail, doves and wild turkeys have all increased at an encouraging rate. Nearly sixty privately-owned game preserves located in various parts of the state now offer about two million acres that are being restocked and protected by the state. Though the oil royalties formerly appor-

tioned to the game fund ceased with the year 1927, the hunting licenses bring in close to two hundred thousand dollars a year for conservation work.

As the game sanctuaries have attracted large numbers of coyotes and a few wildcats, farmers and ranchers are aiding the Commission by shooting all they see. Travis County pays a bounty on soft-shelled turtles, which are so fond of birds' eggs, and also on crows, hawks and road-runners. The porpoises of the Coast are thought by some people to be a pest because of the fish they eat. While there is hostility in certain quarters toward the pelicans, it has been found that they eat chiefly unmarketable fish.

Pelicans are rather abundant along the Gulf coast. Here is a nest of young pelicans on Bird Island, about twenty-five miles from Corpus Christi. In the Middle Ages it was believed that the mother pelican fed her young with blood from her own breast. Photograph, © The Swafford Co.

### SKINKS, LIZARDS, HORNED "TOADS" AND RATTLERS

You would hardly think there was need of the snake ranch mentioned in the chapter on farming, for of the thirteen species of rattlesnakes found in the United States, Texas has six or seven. Moreover, her Western Diamond-back (*Crotalus atrox*) grows larger than elsewhere, sometimes attaining a length of seven feet. Pinkish or tan or blue-gray according to the soil of the region of his hunting ground, he invariably has diamond shaped markings down his back and a white tail set off with black rings. Like most of his kind, he lives on rats, birds, rabbits and lizards, swallowing them whole, then hiding away and sleeping while they digest. At the approach of anyone he fears, he instantly utters the warning of his rattle and hurls himself into a coil ready to strike. The Timber, or Banded Rattlesnake (*Crotalus horridus*) is occasionally seen in East Texas. The olive green Prairie Rattler (*Crotalus confluentus*), with the round brown blotches down his back, is seldom over three feet in length, but he is a vicious specimen. He is oftenest found in prairie-dog towns. After destroying the young in the burrows, he seeks a deserted burrow to sleep off his banquet. The slender little Green Rattler (*Crotalus lepidus*), with his narrow black bands and his pinkish belly, is occasionally seen along the Rio Grande from Eagle Pass westward.

In the eastern coastal swamps live a few of the poisonous Water Moccasins or Cotton-mouths (*Ancistrodon piscivorus*), while in the uplands the deadly Copperhead or Highland Moccasin (*Ancistrodon contortrix*), will generally go gliding out of your way—unless you refuse him a chance to escape. Copperheads are lightish brown in color, with bands of darker brown. In Texas the tail is greenish yellow. Fortunately for the barefoot boy, they are not very common.

The Coral Snake or Harlequin (*Elaps julvius*) is a slender two- to three-foot member of a sub-family that contains some of the deadliest known reptiles. It is closely related to the cobra whose venom is deadlier than that of the rattlesnake. Yet it masquerades in a motley closely resembling that of certain harmless snakes. Its back is ringed alternately with wide bands of coral red, and almost equally wide bands of black with yellow borders. Head and tail are black and yellow. It may prove a safeguard to know that the harmless serpent on which this deadly one has patterned itself has yellow bands alternating with the red, the black appearing merely as a border between them. The Coral Snake is a burrowing species, and makes its home in fields or under the bark of decaying logs, and lives on lizards and small snakes.

Texas, therefore, has all four of the deadly snakes found in the United States, rattlesnakes, water-moccasins, copperheads and coral snakes. Generally, they keep out of the way of man, and the number of individuals bitten is not great. A few small mildly poisonous snakes are found along the Rio Grande.

The number of harmless snakes is large. About ninety species are known in the United States, and Texas has about a third of these, which we have not room to describe. There are several species of the beautiful little Garter Snakes, and also of the harmless water snakes. There are several of the Racers—the large Indigo, or Gopher Snake, a wonderful ratcatcher; the Blue Racer; the Coachwhip and others. All are perfectly harmless and aid man by eating rats and mice. There are several of the Colubers, variously known as chicken snakes, corn snakes, pilot snakes, and rat snakes. Several are quite large, but the only harm they do is to eat young chickens and eggs. They catch enough rats to make up for this. The Bull Snake, or Yellow Gopher, eats rats and rabbits, and is particularly fond of eggs. There are two beautiful slender Green Snakes, which eat insects, and several King Snakes, so-called because they feed chiefly upon other snakes. One species, the Red King Snake, or Milk Snake (*Ophibolus doliatus*), lives around barns, seeking rats and mice, and is ignorantly charged with milking cows. Some of the king snakes resemble the deadly coral snake. Another snake is an amusing specimen. Many a boy has caught a Hog-nosed Snake (*Heterodon nasicus*) which, being too thick bodied to glide rapidly in flight, first bluffs by spreading himself out and hissing, then rolls over on his back and "plays 'possum." Lying there as if suddenly dead of fright, he will only betray himself if you turn him right side up, when he will promptly roll over again.

### Horned "toads" and Gila monsters

There are snakelike lizards in Texas, marked by the deep folds on their sides. The Gila monster (*Heloderma suspectum*), the only poisonous lizard, is a blunt four-legged reptile attired in a rather tasteful design in flesh pink and black, that gives the beadlike points that serve as scales a deadly distinction. He is occasionally found in parts of Southwest Texas, up to two feet in length, though that is unusual.

There are lizards no more than three and a half inches long, tail and all. They turn light or dark, chameleonwise, to match their habitat. Striped lizards frequent the dry sandy regions of West Texas, where they live in burrows, and may often be seen racing along the side of the road. The Texas skink (*Eumeces tetragrammus*) is a greenish striped lizard about as long as your palm, and if you catch one by the tail, he will somehow manage to twist it off and run away, while the tail left in your hand will continue for some minutes to wriggle. The skink is entirely harmless, though it may bite vigorously.

Several species of the large Sea Turtles are taken in the waters of the Gulf. Two large Snapping Turtles are found in the lower courses of the rivers. Occasional specimens are more than two feet long. Several species of the smaller Musk or Mud Turtles are found in the streams. The Terrapins divide their time between land and water. The commonest is the Texas Terrapin (*Chrysemys texana*), a flat-shelled turtle found around San Antonio and along the Pecos River. You will know him by the yellow spot behind each eye and one above his temples. If you go fishing in a muddy river, you will be very apt to pull out a musk turtle. Occasionally the delicious Diamond-back (*Malacoclemmys palustris*) is taken. The Box Turtles, so-called from their ability to close up their shells, are land

# SOME HARMLESS AND POISONOUS SNAKES

An excellent photograph of the Southern hog-nosed snake. This snake is harmless.

The harmless gopher or indigo snake with young.

The Western diamond-back rattlesnake is one of the deadliest of all snakes, partly because of the nature and partly because of the quantity of its venom. This is an excellent example of this snake.

Upper photographs, Elwin R. Sanborn; lower, Publishers Photo Service.

Photograph, Francis Harper. **Wild Ducks in Flight.**

reptiles. Several are found in Texas. The true Tortoises like to be both warm and dry. Both the Gopher Tortoise and Berlandier's Tortoise are found in Texas.

Perhaps your favorite reptile, certainly the one that makes the most amusing pet, is the horned lizard (*Phrynosoma cornutum*), more commonly known as the horned "toad" because of his wide toad-like body. His tail is shorter than that of other lizards, and the dozen species native to the Lone Star State wear their horns in a variety of styles. The spiny scales on their backs can rise to make uncomfortable swallowing for the enemy snake. Like other reptiles, the young are born in transparent egg- or oval-shaped membranes or "shells," from which they promptly emerge, fully ready to try their legs. Gentlest of the desert dwellers, they avoid a good many of their foes by going to bed at sundown. This process they accomplish by poking their noses into the sand, and wriggling their way under cover, shoving the surplus sand away over their backs. They do their hunting by day, darting over the ground so swiftly that they can catch flies on their sticky tongues. In captivity, they will climb the window screen for their prey. When you try to catch one, he will stretch out as long as he can, and rising high on his slim legs, lead you a merry race. Once you get your hand on him, he will flatten down into the sand as if there were still hope of evading detection; but when he finds himself actually captured, he will puff up round in his wrath. The worst he can do, however, is to twist his head in your hand in the effort to scratch you with his horns. The alligator is disappearing from Texas, but tiny ones are still sold for pets in some of the Gulf towns.

**Ducks and geese frequent the lakes of the South Plains in fall and winter.**

A Leaping Tarpon.

# THE FISH AND THE FISHERIES

THE fish of the Gulf are one of Texas' great natural resources. The state has a coastline of four hundred miles, if measured along the outer line of the chain of land-locked bays, and nearer two thousand miles, according to the U. S. Bureau of Fisheries, if measured along the winding inner shoreline. Great schools of fish from semi-tropical regions migrate northward, some, at least, for the purpose of spawning in the bayous. The list of salt water fish includes the mammoth tarpon, the fish that offers the tourist the most unexcelled sport fishing, the bass, pompano, flounder, sea-trout, kingfish, Spanish mackerel, bluefish, redfish, eel, sea-pike, herring, angelfish, jewfish, sunfish, sturgeon, mullet, sheepshead, drum and others too numerous to mention.

The rather sluggish streams of the wide Coastal Plain of Texas also contain many fish, of which the large-mouthed black bass is the most important. The spring-fed streams of Southwest Texas are many of them cold enough for fish from northern waters. East Texas has a number of natural lakes, the largest of which is Caddo Lake, a popular resort on the Texas-Louisiana line. But save in South and Southwest Texas the streams are either getting fished out, or they suffer from pollution from oil refineries and other commercial establishments built along their banks. The Davis Mountains and the arid portions of Texas and the variable streams subject to spring floods and summer drought are of course not favorable to fish.

The fresh water fish found within state borders include several bass, especially striped, black and calico, a number of catfish, perch, bream, crappie and other varieties less popular.

The sport fishing of Gulf waters attracts tourists in large numbers to Galveston, Corpus Christi and other port cities. Indeed, the huge silver king tarpons have drawn sportsmen from all over the world. These shining warriors will put up a glorious fight, racing and diving and leaping with the hook until exhausted. Tarpon up to a hundred and fifty pounds in weight have been taken. Another game fish of the Texas coast is the large-mouthed black bass. The shovel-nosed sharks, among other off-coast fish, tempt the sportsman, as do several kinds of trout and, indeed, most of the list. Giant ray fish up to two thousand

pounds have been photographed on the wharves of Galveston, where they tower above their captors, veritable monsters of the deep.

There is no considerable commercial fishing of fresh waters, as the game laws prevent the taking of fish save by hook and line, or, in some counties, by a seine with large meshes. Crappie and bream may not be sold at all. Many of the counties have special laws.

Commercial fishing has centred around the port cities of Galveston, Orange and Port Arthur, Beaumont, Houston and Texas City, and also Palacios, Port Lavaca, Rockport, Aransas Pass and Corpus Christi. Galveston has a red snapper fleet which fishes the waters of the Gulf of Campeche—although Point Isabel has not developed this possibility. According to tax collections, ninety millions of pounds of fish have been taken from the bays in the past quarter century. Yet the commercial fisheries have not kept pace with the growth of population and Texas imports fully half her fish food from California and the eastern Gulf states.

One of the most productive fishing grounds has been the Laguna Madre, but only where the circulation of Gulf waters has kept the waters fresh or where interior pockets have been freshened by rainfall. The Laguna is a hundred miles long, but except at Santiago Pass and Corpus Christi Pass there are no inlets for the waters of the Gulf. Midway between these two points the evaporation of the water causes the salinity to become sometimes four times that of the Gulf. Fish die by thousands in summer because of the saltiness, while they may be overtaken by winter frosts before they can escape to deep waters, which are warmer.

This fishing party just returned from a day's sport in Corpus Christi Bay is proud to show the success of its efforts. In few localities can the fisherman be so certain of success. © Publishers Photo Service.

For several years there has been discussion of cutting one or more inlets through the sand bar which separates the Laguna Madre from the waters of the Gulf. Such a scheme would probably be effective if the inlets would stay open, which is doubtful. Some think that the first storm would close them and all the trouble and money would go for nothing.

### OYSTERS ALONG GULF COAST, ALSO SHRIMPS AND CRABS

Of shellfish, oysters and shrimps are the most important commercially. A few crabs are taken. Schools of shrimps are found in Gulf waters and trawlers have made large hauls miles from shore.

Shrimps began to be taken commercially in 1922 and to-day fully half the catch goes to the canneries at Galveston, Corpus Christi and Aransas Pass, which in record years have shipped a million pounds of shrimp meat to other parts of the country. Shrimps are also one of the local luxuries that appear on Texas tables. But the fishing of chief commercial importance is that of the oyster, even though unusual conditions of drought cause a sharp decline in oyster production, owing both to the over-salinity of the bays at such times and to the scarcity of oyster food. You have seen in the Book of Knowledge how oysters are planted, gathered and prepared for market. In Texas, oysters grow both on the reefs of the bays and on the mud surrounding the reefs, provided it is stiff enough to support the weight of the shells. The reef oysters (snappers or coon oysters) are the poorer grade, and are killed by freshets, severe storms, and continued deposits of sand, as well as by overfishing. The best oysters are those on grounds where they have room to grow singly. These places are incorrectly called reefs by the fishermen; they are really oyster beds. Such beds exist on hard-shelled bottom mud in the shallow waters of Mesquite, Karankawa and Keller bays and the Northwestern part of Aransas Bay, between Portsmouth Point and Palacios Point, and in Matagorda Bay, though the oysters in Keller and Matagorda bays have died out and will have to be replanted. During a season of drouth the oyster yield of the Texas coast is but seventy-five or eighty thousand barrels, though good years average over a hundred thousand. In some oyster beds in other states polluted waters have caused diseases such as typhoid. Fortunately there has been no such difficulty in Texas.

Photograph, courtesy Galveston Chamber of Commerce.

**Galveston calls its waters a "fisherman's Paradise," and this catch would seem to justify the boast. Some of these tarpon seem to be nearly or quite five feet long and must have made a game fight.**

The very fact that Texas is rich in both game and commercial varieties of fish has made her coast a battle-line in which rival interests contend. One side wishes her land-locked bays to continue to attract the tourist fisherman. The other side says that the important thing is that they should be open to the commercial fisherman to supply the markets. The Game, Fish and Oyster Commission of Texas maintains that the building

of fisheries will benefit everyone concerned. With the exception of red snapper, which comes from deep water, most of the fish caught are found in the bays and the shallow passes that connect them with the outer Gulf, and it is unlawful to use seines or nets within a mile of these passes, while dredging operations—such as those at Port Isabel—prevent the entrance of fish into the inlets.

### Work of Game, Fish and Oyster Commission of Texas

Lest the oyster disappear, seed oysters are being planted by the state in Mesquite Bay, Hall's Reef, Rockport, Trout Bayou, Aransas Pass and Karankawa Bay. In the shrimp industry, it is felt that there has been serious loss because trawlers catch shrimps that are too young for marketing. The Game, Fish and Oyster Commissioner of Texas has the power to regulate the size of shrimps, hence those brought up in the net and found to be undersized are dumped back into the bays; but as these little fellows have already been killed, the practice does nothing to conserve young shrimps. A measure that will help solve the pollution problem in shrimp waters is one recommended by the Commission, namely, that the waste from dressing shrimps be not thrown back into the Gulf but utilized in the manufacture of glue and fertilizer.

The 40th legislature passed a law ceding to the Commission all islands belonging to the state to be used for game propagation farms and salt water fish hatcheries, and the Commission plans to propagate trout and redfish, first of all, at these hatcheries. In addition, many bays where trout spawn have been closed to seining.

Little planting of oysters has been done. The bays were surveyed in 1925–26 by the Federal Bureau of Fisheries and the State Commission, and the study is still in progress.

### How the Oil Wells Polluted the Streams

While there is still a chance for the boy with a can of worms in contest with the fighting bass or the spiny catfish, especially in the western part of the state, there is actually an oil company to every mile of stream, with several thousand more oil companies thrown in for good measure, and fish do not thrive on a diet of petroleum. While the majority of the oil men do what they can to avoid polluting the streams, and are spending large sums of money on clean-up measures that will in time make Texas streams fit for the finny tribes, one large company of West Texas has had to be prosecuted for pollution of the rivers. The Game, Fish and Oyster Commission of Texas is, however, doing all it can to restock the lakes and streams by propagating fish in the state fish hatcheries.

Oil wells are so scattered in Texas that the attempt to keep the streams clean is an enormous task. Comparatively little oil will render a stream unfit for the habitation of fish,—and there is so much oil. Only eternal vigilance on the part of the authorities, and the co-operation of the oil companies can solve the problem. This difficulty is not entirely confined to Texas. Other states have had to do with the same problem.

However, oil wells are not the only cause of pollution. The waste of the cities which have sprung up is often not good for fish, and the waste which results from some manufacturing establishments may be deadly poison to them. Many of these factories have been accustomed to pour their waste into the streams, because it would be difficult or expensive to get rid of it in any other way. Sometimes vegetation as well as fish suffers. What was once a beautiful, clear stream becomes a dead channel, which is unpleasant in appearance or in odor. This problem of pollution is probably the greatest with which those interested in the streams must deal.

### The Fish Hatcheries and Their Work

Until 1925 there was but one such hatchery in the state, the Bill Sterrett Hatchery at Dallas made by damming the Colorado. Built in 1914, this hatchery consists of twenty-one ponds in which bass, perch and crappie are planted. Since the 39th legislature made provision for them, four new hatcheries have been completed and several more are in prospect. The "Heart o' the Hills" Hatchery donated by citizens of Kerrville and Junction, completed in 1926, is one of the largest in the Southwest, and probably the largest for the propagation of black bass in the United States. Its boundaries include thirty-two ponds fed by a spring of crystal water. This hatchery is five times as large as the Bill Sterrett. The Cisco Hatchery on Lake Cisco,

in Eastland County, is unique in that part of it lies in the hollow dam employed in making the lake. In it bass, rainbow trout, crappie and catfish are being raised. The handsome rainbows are cold water fish that have been brought from the West. They are also being planted in the Federal Fish Hatchery at San Marcos and its sub-hatchery at Medina Lake. The Izaak Walton Hatchery at Tyler, on Greenbrier Lake, possesses the advantage of an arrangement of ponds whereby they can be filled and drained by gravity. The

The attitude of the people, where they have been taught the necessity of conservation, is generally favorable. To be sure, there are "game hogs" and "fish hogs," who think that they should be allowed to kill as much game and catch as many fish as they can, and resent any effort to control them. The press and the most intelligent people, however, have stood firmly for the preservation and proper use of the game and fish of the state for all the people, and not for a few selfish individuals.

**The tarpon is a near relative of the herring, but there is a great discrepancy in size as the former reaches the length of six feet and a weight of a hundred pounds or more. Some of the best tarpon fishing to be found anywhere is off the coast of Texas.**

This photograph and that on page 151 by Julian A. Dimock, courtesy American Museum of Natural History.

site was donated by the people of Tyler. A fifth hatchery has also been built near Wichita Falls which is fed by the waters of Diversion Lake. In these hatcheries both the native crappie and sunfish are being planted and also rainbow trout, ringed perch and Georgia bream.

Texas has not yet taken up the hatching of salt water fish though experiments in other states seem to show that such a practice may be successful. Maine, Massachusetts, Maryland and North Carolina have propagated certain of the salt water fish, as cod, flounders and shad. The Fish, Game and Oyster Commissioner recommends that the attempt to propagate sea trout and redfish be made.

It sometimes seems a hopeless task to preserve wild life, as the population becomes greater and the manner of living changes. When Texas was thinly settled with few towns and no cities, there were game and fish for all, but since great cities with large industrial plants have sprung up, there seems to be a natural antagonism.

The sale of sand and gravel for road building and mud-shell for the manufacture of cement constitutes a fund that is devoted to the building and work of the fish hatcheries. The combined revenue from mud-shell and the sand and gravel taken from Texas streams in 1927 came to nearly $135,000 and this sum was applied to the work of the hatcheries.

EVEN IN A CITY PARK THE BLUEBONNET THRIVES. THIS BLAZE OF COLOR WAS CAUGHT IN A PARK IN THE CITY OF FT. WORTH

A palm jungle in the Rio Grande Valley.

# PLANT LIFE IN TEXAS

IN an empire as large as Texas, with a latitude reaching from the 26th to the 36th meridian, with an elevation from sea level at the Gulf to nine thousand feet in the Davis Mountains, with an annual rainfall ranging from less than ten inches in the western part to more than fifty inches in the southeastern part of the state, with striking differences in soil and topography, there is a vast difference in the vegetation. Many of the plants described elsewhere in the Book of Knowledge are found somewhere in Texas. On the other hand, few, if any, native plants are common to all sections of the state. It is desirable, therefore, to divide the state into geographical units according to the plant life; the tall forest, the low forest, the prairie, the plains, the desert savanna, and the desert shrub. These units are known botanically as plant formations.

The tall forest is found in eastern Texas, east of the central prairie in the north and east of the Brazos River in the southern part of the state. This is the region of abundant rainfall and has the typical forests. The long-leaf pine is the dominant tree in the uplands of this region east of the Trinity River, north to Lufkin, and south to Beaumont. The short-leaf pine dominates the uplands north of the long-leaf pine area, west to Anderson and Franklin counties. The loblolly pine is the dominant upland tree southwest of the long-leaf pine area as far south as the coastal prairie and west to Grimes County. An outlying area of this pine is found near Bastrop. Other tall trees common in the eastern forest region are red oak, sweet gum, elm, pecan, ash, sycamore and cottonwood. The last five extend westward along the water courses of Central Texas.

The low forests are found west of the tall forest, southeast of the great plains, and east of the desert savanna formations. These low forests occupy the same climatic area as the prairie but on soils not favorable to prairie development. Post oak, black jack oak and hickory occur on the sand ridges in the northern half. Live oaks occur in mottes in the southern half. Cedar brakes prefer the rocky limestone of Edwards Plateau. All of these trees have been described in the Book of Knowledge. Mesquite occurs throughout the area on the prairie type of soil often taking possession of prairies

where overgrazing has permitted them to come in. The pinion or nut pine is the principal forest type of the lower mountains in the western part of the state.

The prairie is the tall grass formation which occupies most of the upland heavy soils of Central Texas. These are usually fertile, black, limy, clay soils. Another prairie region occurs on the heavy clay soils near the coast. The prairies are generally broken by wooded stream courses. The low forest type trees occur in the uplands at places and produce a savanna, which is a park-like landscape of trees and grass. Southwestward as the grass becomes less abundant, the mesquite becomes more common until the prairie passes into the low forest type of mesquite forest.

This magnificent live-oak now standing in Austin has a spread of 125 feet and is one of the finest specimens known. There is a tradition that white men and Indians used to meet under its branches to settle their disputes. Photograph, Jordan Company.

### THE WONDERFUL RIOT OF COLOR ON THE PRAIRIES

The prairie is the region for wild flowers. It is here and in the open spaces of the associated low forest that we find a riot of color in spring and early summer. This is the original home of many of our showiest garden flowers such as the phlox, verbena, coreopsis, liatris, Mexican primrose (*Hartmannia*), penstemon, lantana, gaillardia, gilia, snow-on-the-mountain, bluebonnet and many others worthy of domestication. But one has to see the mass effects stretched across the prairies to appreciate them. There is no other region in America that equals the Southwest for flower display. This is contrary to the impression held by those who have never visited the region.

The plains differ from the prairie in being a short grass formation. Most of the area is covered by a thick, soft carpet of buffalo grass, which takes on new growth with each rainy season and goes into resting condition with drought. It makes a very nutritious pasturage. The main area occupied by the plains was formerly the bed of an ancient lake that occupied the present Panhandle and the South Plains for a distance of one hundred and fifty miles. The region is a high plateau, three to five thousand feet, of gently rolling, fertile, heavy soils. Trees or shrubs are not seen except along the "brakes" caused by streams. Its flowers are mostly members of the Composite family. Other smaller plains or short grass regions exist on the high plateaus west of the Pecos River and east of the Davis Mountains.

### SOME OF THE PLANTS OF THE MORE ARID REGIONS

The desert savanna is made up of short grass accompanied by low mesquite shrubs, catclaw, cactus and other dwarfed and usually thorny shrubs. The desert savanna occupies a large area east of the

# SOME OF THE INTERESTING PLANTS OF THE BIG BEND

The prickly pear is an edible cactus, called "nopal" by the Mexicans. Cattle eat it greedily if the spines are burned off.

The strawberry cactus bears a crimson blossom, followed by a purple fruit which tastes something like a strawberry and is often eaten.

Pasanilla (left) is believed by the residents along the Rio Grande to cure rheumatism. Sangre grada (right), called leatherweed in the Big Bend, is also believed to have medicinal properties. The cane cactus (centre) is the most annoying of the family.

plains and west of the low forest and extends in a broad belt from the Red River to the desert shrub formation along the Rio Grande and Pecos rivers.

Desert shrub is a formation of scattered dwarfed shrubs with fifty per cent or more of barren soil. It is a half-desert region in which the scarcity of water is shown in the appearance of the vegetation. The creosote bush and the yuccas are the most characteristic members. Candlewood, ephedra, and many cacti occur generally. Candelilla grows along the Rio Grande in the Big Bend region and guayule in the northern part. The desert shrub occupies most of the area west of the Pecos River and certain tracts along the Rio Grande to the east.

### The useful and picturesque cypress

In the humid eastern portion, and extending up the river courses into Central Texas grows the cypress. This ancient tree often reaches a diameter of five feet and a height of one hundred and fifty feet. It braces itself in its swampy habitat by wide spreading buttresses and sends up weird stump-like growths that we call "knees" which assist the roots in respiration. Its high spreading crown is a favorite nesting place for herons and pelicans, and the limbs are often bedecked with long festoons of gray Spanish moss. The lacy leaves and smaller stems are cast off in winter, contrary to the habit of most of its cone-bearing kin which are evergreens. It is a long lived tree possessing a very ancient lineage. There is probably no other tree in Texas which goes so far back in time to the age when the great lizard, the dinosaur, roamed the woods. It belongs to the family which includes the Mexican cypress, the big trees of California and the redwoods. Its fossil remains are found over most of North America and Asia as far north as Greenland, Alaska, and Spitzbergen. Geological changes in climate have eliminated it from all but its present place in the southern states. There are few young trees coming on and its planting should be encouraged. It is a desirable ornamental tree for grounds and waterfronts where soil is moist. The wood is easily worked, very durable, and has little tendency to shrink or warp. Lumbermen in other states where cypress is more plentiful are advertising extensively in order to popularize it.

### The importance of the different species of pines

The pine is the dominant forest tree in the timber region of eastern Texas, occurring mainly on the sandy soils. There are three species distinguished by the number of needles or leaves in a bundle, and the length of leaf. Long-leaf pine (*Pinus palustris*) has leaves nine to eighteen inches long, three in a bundle, and large cones, six to ten inches in length. The loblolly (*Pinus taeda*) has leaves six to nine inches in length, three in a bundle, and cones, three to five inches in length. The short-leaf pine (*Pinus echinata*) has leaves three to five inches in length, two in a bundle, and cones, one and one-half to two and one-half inches in length. The longer the leaf the larger is the cone of the species.

All three species of pine are large, tall trees dominating the forest where they occur, each in its own region of dominance. The long-leaf pine occupies the central area extending east from Louisiana to the Trinity River. The loblolly adjoins it on the south and west, and the short-leaf, on the north. The latter two species are pioneering forms; that is, they are usually the first of the forest trees to enter new situations such as old fields or cleared land. This is due to the immense number of winged seeds produced between the scales of the cones which are carried for long distances in the wind.

Pine foliage requires direct sunlight: therefore, where they grow close together the lower limbs are constantly dying and falling off as new branches grow above them. This produces the tall branchless trunks of the pine forest. Because of this dislike of shade, seedling pines are successful only in open woods where soils are impoverished. Fertile soils produce other vegetation of such rankness as to shade them out. The pine is the most important of all timber trees because of the ease with which man can use it. Pine lumber is light, easy to saw, easy to nail, and to handle in many ways. Besides its use as lumber it is the source of turpentine, resin, and many other products.

Three species of pine grow in the mountainous region of western Texas. The most widely distributed species is pinion pine (*Pinus edulis*) a dwarf pine that is remarkable for its large nut-like

# THE MOST IMPOSING OF ALL PINES

The long-leaf pine has a considerable range in the United States, and few trees are more imposing. The straight trunks rise high in the air and have a majesty of their own. It was once abundant in parts of Texas, but such trees as these are no longer common.

Photographs on pages 161, 162, 163, courtesy American Forests and Forest Life

# TREES MAY BE KNOWN BY THEIR BARK

On the left is a stand of young short-leaf pines; on the right the bark of a long-leaf tree. Its bark is thin, orange-brown in color, and clings closely to the trunk.

The bark of the loblolly pine is thick, sometimes as much as two inches, which helps the tree to resist fire. On the right is a short-leaf trunk. Its bark is between the other two in thickness.

seeds, which are much sought after by Indians and Mexicans for food. The two other species, western yellow pine (*Pinus ponderosa*) and the Rocky Mountain white pine (*Pinus flexilis*) are of very limited distribution.

orchard. The feathery, drooping, light green, twice compound leaves are quite graceful. The two divisions of each leaf bear ten to sixteen pairs of narrow, entire leaflets about an inch in length. The fruit is a slightly curved, slender bean

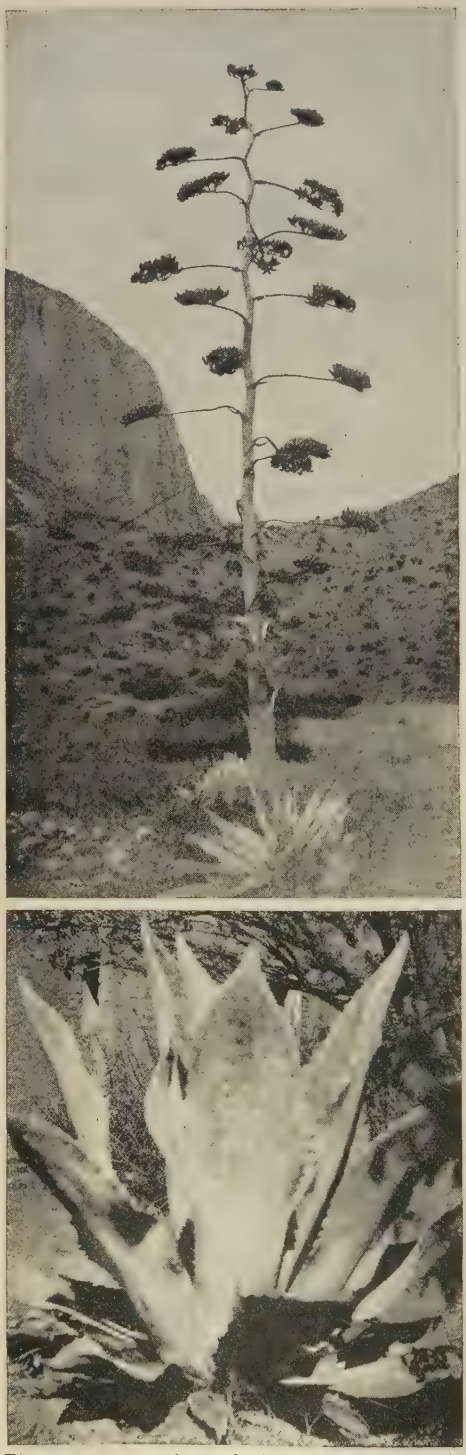
On the left are a cone and needles of the loblolly pine, while those of the long-leaf are on the right. The cone of the latter may be as much as ten inches long, and the needles may be fifteen or even eighteen inches in length. They always occur in threes. Photograph, courtesy American Forests and Forest Life.

### THE MESQUITE IS A VALUABLE TREE IN SOME REGIONS

Mesquite, the commonest tree in the southwestern and central part of Texas, is a small tree about the size and shape of an apple or peach tree. They usually form an open, park-like landscape and give the appearance in winter of an

that does not split on drying. These beans are a nutritious stock feed and are sometimes used as food by man. The wood is quite hard, close-grained and takes a beautiful finish. It makes durable posts and is also used for gun stocks and ornamental wood work.

Huisache (*Acacia farnesiana*) is a small



The agave, or century plant, grows freely in the arid and semi-arid Southwest. At the bottom is a young plant. The flower-stalk may be twenty feet high and is the largest flower we have.

tree or shrub with numerous stems arching from a centre, giving a spreading fountain-like appearance. The leaves are pinnately compound (feather-like), smaller than those of the mesquite tree which it resembles. At the base of each leaf are two thorns. The fragrant orange flowers are borne in globular heads one-half inch in diameter. The huisache is cultivated for perfume in the tropics and in France. In this country it is highly prized for its honey and pollen.

The agarita (*Berberis trifoliolata*) is a barberry and bears acid red berries, used for jellies and pies. Its Mexican name, *agrito,* means "a little sour." The plant is a small evergreen shrub with light green stiff, spiny, three-foliated leaves. The spiny leaves make it necessary to gather the berries by threshing them on a sheet. Because of the flowers in early spring, of the fruit in early summer, and the gray-green evergreen foliage, the agarita is a popular plant in lawn decoration.

### THE MANY MEMBERS OF THE CURIOUS CACTUS FAMILY

A most bizarre group of plants is the cactus family, which represents an adjustment to a droughty climate. True leaves have given place to spines, and the stems, which contain the green chlorophyll for food manufacture, are short, fleshy, water-holding structures. There are pear-shaped joints in the prickly pear; melon-shaped, in the devil's head, devil's pincushion and barrel cactus; and cylindrical in a number of species. The roots are shallow feeders and take up water with recurring rains. The water storage tissue of the fleshy stems, the mucilaginous sap, and the thick skin enable these plants to live for months with little water.

The cactus flowers are made up of numerous sepals, petals and stamens attached to the top of the fruit which is usually pear shaped. The fruits of the prickly pear are often eaten raw or made into candies and jellies, and the pulp of the stem of the devil's head cactus is also used in making candy. The stems of the prickly pear are often used as feed for cattle, but the spines are first burned off by means of a blow-torch. About twenty tons of this forage can be produced on an acre. The national flower emblem of Mexico is the cactus. The design on the Mexican coat of arms is an eagle holding a snake in its beak, perched upon a cactus.

# SOME OF THE MANY YUCCAS

Few plants are more curious than the yuccas, some of which are found in many parts of Texas, especially in the west. There are many species; the most common is the Spanish Dagger, shown at the bottom.

Photographs, courtesy Gateway Club, El Paso; Brewster County Chamber of Commerce.

### THE RAIN LILIES AND THE SHOWY YUCCAS

These stars of the prairie get their name from their habit of coming up after heavy rains. They follow the rain after two or three days, and in a few more days no more flowers are seen until rain brings another shower of blossoms. The rain lilies are members of the Amaryllis family which is distinguished from the Lily family by having the tubular base of the flower grow from the top of the fruit, whereas, in the lily the petals grow from below the fruit. The two families are similar in having six stamens and six divisions of the perianth. The largest and earliest of the rain lilies (*Cooperia pedunculata*) is about two inches across. The smaller rain lily (*Cooperia drummondii*) is about one inch across and flowers from midsummer to fall. Both are white, turning pink with age.

There are several species of yucca. Spanish dagger (*Yucca treculeana*) and bear grass (*Yucca tenuistyla* and *Yucca arkansana*) are the most familiar. They are characterized by huge terminal panicles of creamy white, bell-shaped flowers, each bearing six stamens and six divisions of the perianth. The fruit is a three-chambered capsule. The leaves of the bear grass were formerly much used for tying bags and hanging meat because of the tough fibre they contain. The leaves of the Spanish dagger are stiff, and are armed with a very dangerous spear at their tips. The leaves are softened over fire and the fibres used to make a crude twine. The flowers may be cooked as a vegetable, or eaten raw as a salad. Yuccas are widespread in their distribution but reach their fullest expression in the semi-desert region west of Devil's River. Here they are the characteristic feature of the landscape.

### THE BLUEBONNET, THE STATE FLOWER OF TEXAS

The bluebonnet (*Lupinus texensis*) is a lupine almost restricted to Texas. The name bluebonnet is quite descriptive of the flower which is bright to dark blue. The standard or uppermost petal stands erect and is folded back like the wings of a butterfly at rest and the spot of white on the face of the young flower changes to red with age. The stamens and pistils, which are hidden between the two lower petals, dart forth whenever a bee lands. The flower cluster is a many-flowered, erect raceme, three to seven inches in length, tipped with pale green buds. The five to seven gray-green leaves form a becoming background for the blue flowers. The charm of the bluebonnet lies more in the effect of the flowers in mass than in the beauty of a single plant. It is the spread of blue, mingled with the colors of other flowers, on glades between cedar and mesquite and over the prairies that make the greatest appeal to the eye. The bluebonnet forms the principal theme for the artist and poet of the Southwest.

Sensitive briar (*Schrankia uncinata*) is often called shameface because of the sensitiveness of the leaves to touch. It is one of the sensitive plants and a member of the Mimosa family which is a sub-family of the Pea family. Its flowers are borne in fluffy pink balls about an inch in diameter. The leaves are doubly compound pinnately, and at the base of each leaf and leaflet is a mass of loose tissue which collapses under the slightest touch or jarring. When the water is reabsorbed the leaf lifts. The stems are herbaceous, quite prickly, and creep over the ground from perennial roots. It flowers principally in May and is a great favorite with children.

### THE TEXAS BLUEBELL AND THE PINK GENTIAN

The Texas bluebell, or purple gentian (*Eustoma russellianum*) is a member of the Gentian family and is one of the most gorgeous of wild flowers. The large bells, three to four inches deep, are formed by five slightly united purplish blue petals. White forms sometimes occur. The flowers grow in terminal clusters. The plants grow to a height of fifteen to twenty inches and bear opposite, entire, smooth, whitish green leaves. They often grow in great profusion on abandoned blackland fields giving the effect of a field of purple. In gathering these flowers care should be taken to leave the root and basal portion of the plant, as it will flower again the following season if not destroyed. The flower does not shatter and wilts slowly, which makes it an excellent cut flower, well suited to commercial uses. The habitat best suited to this plant is a limy, clay soil. It flowers in late June and July.

The pink gentian, or Texas star (*Sabatia campestris*) is closely kin to the

Texas bluebell and like it has excellent keeping qualities. The flowers are five-pointed, pink stars one and one-half to two inches across. Its favorite habitat is a moist prairie. Other members of this genus grow in marshes and are called marsh pinks. They flower in May and June.

### Evening primroses, white, pink and yellow

The evening primroses, more familiarly known in Texas as buttercups, are represented by some species in all parts of the state. They are characterized by four showy, white, pink or yellow petals, growing from a tube above the dry fruit capsule. The eight stamens produce webby thread-like strings of pollen which become entangled with the legs of bees and are carried from one flower to another. This pollen readily sticks to one's chin or nose and is supposed to indicate the person's fondness for butter: hence, the local name of buttercup. The true buttercup differs from the evening primrose in having numerous stamens and five petals, which, because of the shiny, greasy appearance of the inner surface of its petals, gives it the name of buttercup.

The pink evening primrose (*Hartmannia speciosa*) is the best known and most popular member of this group. It grows profusely in spring and early summer over the prairies, along the waysides, and on vacant lots. The flower is quite large, two to four inches across, and varies in color from white to pink with yellowish centre. It is often grown as a cultivated flower under the name, Mexican primrose. As a decorative plant it is most satisfactory, as it is a hardy perennial which grows in grass and with little attention.

The yellow evening primroses have the same structural features as the pink and range in size from the giant primrose, four to five inches in diameter, to the small flowering species commonly called sun-drops. All of these have the flowering habit of opening in the night and remaining open for only a few hours after sun-up.

### The many species of phlox on the prairies

The phlox is characteristic of many prairies and sandy open woods. There are several species which vary from pink to red, lavender to dark purple. Great range of color is found in the same species. The garden phlox is derived from the wild phlox of this region. The name, sweet william, is often applied to the phlox because of its superficial likeness to the garden sweet william or pink. The latter has five separate petals whereas the phlox has a corolla of five united petals.

Standing cypress (*Gilia rubra*) is a member of the phlox family, and has wand-like stems, three to six feet tall, which bear a shaft of red, five-pointed tubular flowers on the upper portion and feathery finely divided leaves below. The flowers mature first at the top then

A fine pecan tree.

downward. The individual flowers resemble those of phlox except that their faces are more star-like. The cypress vine, the flowers of which resemble gilia, is a morning-glory.

### Some of the verbenas or vervains of Texas

There are several species of verbenas or vervains in the Southwest. They are widespread in their distribution and often occur in continuous stands. In the drier areas of the Southwest they constitute the most colorful members of the spring flora. The flat-topped spikes characteristic of garden verbena are characteristic of most of the wild species. *Verbena bipinnatifida* with its purple to pink flowers and twice-divided leaves is the representative species. The verbena was held

sacred by the Romans, the Celts, and the early Teutonic races and was worn in wreaths or charms for good luck. It was supposed to keep away witches and disease.

Bee bush, white bush, chaparral (*Lippia lycioides*) a member of the vervain family, is the most important honey plant in Texas. Its small, white, tubular flowers are borne in slender spikes and bloom through the growing season. It grows through the southern part of Texas and is being introduced as a bee plant in other sections. In the region south-

### INDIAN PAINT BRUSH OR INDIAN BLANKET

Indian paint brush and Indian blanket are the names generally used in the Southwest for the plant known in other sections of the United States as Indian pink or Indian paint-cup (*Castilleja indivisa*). The former names are fitting in this region where it is usually seen in mass, a brilliant scarlet blanket spread upon the grassy prairies in springtime. The Indian blanket and the deep red firewheel (*Gaillardia*) are the two dominant red flowers of the prairies. The red

The North Texas State Teachers College at Denton has a very attractive campus, on which are several varieties of oaks, and much shrubbery which shows a vigorous growth and adds to the charm of the scene.

west of San Antonio down into Mexico it forms dense thickets called chaparral.

Lantana (*Lantana horrida*) is another shrubby member of the vervain family with flat verbena-like flower clusters. The leaves are opposite, simple, broadly ovate, and rough. The flowers are lemon yellow when young but change to orange-red with age. This results in a flower cluster of young yellow central flowers and old orange marginal flowers. A form with purplish flowers also occurs. These plants flower through the driest weather of summer and have become a very popular, hardy, cultivated shrub. It has become naturalized in Hawaii, where it was introduced years ago.

of the Indian blanket is in the flowering bracts or upper leaves, and not in the flower proper which has an inconspicuous pale corolla and pink calyx. The Indian blanket may be successfully grown on the lawn by sowing the seed the preceding summer or fall upon the grass. It feeds as a parasite upon the roots of grass and cannot be grown in an open bed.

Gaillardia (*Gaillardia pulchella*) is known as firewheel, or blanket wheel, but the seed and flowers are sold under its scientific name, gaillardia. It is usually a deep purple-red daisy, with yellow ray tips ending in three teeth. The centre is a globular head of disk flowers and reddish brown chaff. It shares with Indian

paint brush (*Castilleja*) in being called a blanket flower. They truly merit the term as they blanket the prairies with acres and acres of color, the latter in the springtime, especially in April, with a brilliant scarlet. The former comes in May and June with a flaming blanket of deeper hue.

### Blazing star and its peculiar flower

Blazing star or gayfeather is a name generally applied to the several members of the genus *Liatris,* some species of which occur in all regions of the state. They are characterized by wand-like shafts of rose to purple flowers. These gay, spike-like shafts of flowers that beckon you across the prairies and through the grassy open woods in late summer and fall are appropriately called gayfeather. The names blazing star and shooting star are descriptive of its inflorescence.

It is interesting to note that its flowers mature from the top downward like the burning of a sparkler. This is contrary to true spikes in which the flowering is upward. The name button root is fitting also because the stem bears an enlarged tuberous base. These bulbous tubers are easily transplanted and make a decorative plant for yards. Blazing star is a popular cut flower and is sold by florist shops. They also retain their color and stiffness on drying so may be used for permanent bouquets. The roots are supposed to cure sore throats and snake-bites.

### A possible future source of rubber

Guayule, or rubber plant (*Parthenium argentatum*) is a low semi-shrub about one foot in height with silvery ragged leaves and small white flowers. It resembles the common Parthenium ragweed except in being more dwarfed and the leaves less divided. It is a member of the Composite family. The guayule is the only present commercial source of rubber in the United States. The rubber occurs in solid particles in the tissues, especially of the roots. The entire plant is ground up and the rubber set free. There are several small factories in the Southwest engaged in manufacturing rubber from this plant. The greater part of the yield has come from wild plants but at present considerable effort is being made to grow the plant commercially. Unfortunately, it grows very slowly.

Ocotilla grows in profusion across the Pecos. It is a perennial shrub which grows to a height of fifteen feet, and produces a gum which can be used in making glue or leather substitutes.

### The many daisies which are found in the state

White daisies resemble the cultivated Shasta daisy and the marguerite or white

daisy of the northern and eastern states, in that they have a centre of numerous minute yellow flowers and a border of white ray flowers. All are members of the composite thistle family. The two commonest daisies of Texas belong to the genus *Aphanostephus*. These are common on sandy soils throughout Central, South and much of East Texas, also on the coastal strand. The mountain daisy or rock daisy belongs to the genus *Melampodium*. This little plant forms dense tufts and blooms profusely. The rays are broader and fewer, five to eleven, than in the above species. It occurs in the Edwards Plateau and other rocky soils of Central Texas. Fleabanes are probably the best known of white daisies. They differ from the other daisy in being much taller, in having a central stem, and a flat topped inflorescence of numerous heads. There is a beautiful early spring flower, the anemone, which is erroneously called a daisy. It has a centre of pistils and yellow stamens and several rows of white or bluish petals. The sepals which form the outermost circle are usually purple on the outside. The flower stalk (peduncle) has a characteristic collar around it of leafy bracts about halfway down. All other leaves are basal and compound. The western daisy, a true daisy belonging to the genus *Bellis*, is a small erect annual with white to lavender flowers and occurs abundantly in April associated with post oaks.

Yellow daisy is a term applied to many yellow-rayed members of the Composite family. The black-eyed-Susan, the best known of the yellow daisies, belongs to the genus *Rudbeckia*, which are popularly known as cone flowers or "nigger heads" because of the high cone of small disk flowers in the centre. The Prairie Star or Lindheimer's Daisy is characterized by five broad rays which give it the appearance of a star. It is the commonest yellow flower of the blackland prairies in springtime. The genus *Lindheimera* is named for Ferdinand Lindheimer, the most prominent of the early Texas botanists. Engleman's daisy resembles the above except that it has eight rays instead of five and its leaves are more lobed. Yellow daisy (*Tetraneuris linearis*), a common daisy on barren chalky soil where little else will grow, has narrow, entire leaves and thirteen to twenty-three rays. Bitterweed (*Helenium tenuifolium*) is a troublesome weed in pastures and lawns and causes milk to become bitter. Yellow sideranthus is a beach daisy with stiff leaves and flaring short tipped teeth. Coreopsis and the similar genus *Thelesperma* together with the golden ragworts, differ from those mentioned above in being more golden. They furnish most of the gold of the prairies and meadows in springtime. *Coreopsis drummondii* is becoming popular as a garden flower.

### The interesting milkweeds and their flowers

The milkweeds are weed-like plants with reservoir ducts holding a milky fluid rich in rubber content. Most of our milkweeds belong to two families, the true milkweed and the spurge, which are readily distinguished by the character of their fruit and flowers. The fruit of the true milkweeds is a large pod which opens on one side. The pod contains many flat seeds each of which has a tuft of long white silky hairs at the end. The flower of the milkweed grows in clusters called umbels. The five upright, petal-like structures of the flower are in reality not petals but outgrowths of the stamens called stamen hoods. A horn usually protrudes from the centre of each concave hood. The fruit of the spurge family is a three-lobed capsule with one large seed in each of its three chambers. The fruit is usually a little longer than broad and much smaller than that of the milkweed. The flowers of the spurges are usually of two sorts, male and female, but are difficult to analyze.

The most colorful member of the true milkweeds is the butterfly milkweed with its orange to orange-red flowers. The Texas milkweed has white flowers. Both plants are reputed to have medicinal properties. The former furnishes the druggist with the pleurisy root used to ease breathing and pains in the chest, and the latter is used by Mexicans for ringworm and rattlesnake bite. There are many vine-like species with leather colored flowers.

### Some of the members of the spurge family

The more interesting members of the spurge family are bull nettle or tread softly, snow-on-the-mountain, and candelilla or wax plant.

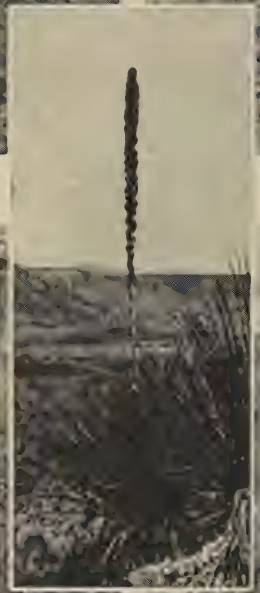
The bull nettle is a large, coarse weed with fragrant, five-pointed, white, tubular

# THREE VALUABLE PLANTS ACROSS THE PECOS

Candelilla is a perennial plant which grows profusely in the Trans-Pecos region, and furnishes a wax which is used in making varnishes and polishes and in water-proofing fabrics.

The shrub is pulled up by the roots and hauled to the factory, where it is boiled to extract the wax from the bark. Several factories in Brewster County are in operation.

Lechuguilla is also found across the Pecos. Its leaves furnish a fibre which is used locally for cordage and mats. It is one of the strongest fibres known.



Sotol, shown above and in the inset, has many uses. Its leaves furnish a strong fiber, and are also used for thatch. The head may be eaten, and cattle like it.

Vegetation in the Big Bend region across the Pecos.

flowers about one and one-half inches in length. The three large nut-like seeds resemble those of the castor bean, another member of this family. These seeds have a nutty flavor and are much sought after by children. The bull nettle gets its name because the large stiff hairs are filled with poison. This is injected into the wound when the tips penetrate the skin and break off. This plant prefers dry sandy soil.

Snow-on-the-mountain, white topped spurge, or more appropriately, snow-in-summer, mantles the fields in August with white. In the southeastern part of Texas it occurs as a weed so abundantly on all non-acid and limy soils as to enable one to locate from an aeroplane the extent of these soils. The western species, *Euphorbia marginata,* differs from the eastern species, *Euphorbia bicolor,* in not showing a decided soil preference and is more scattered in distribution. The white showiness of the inflorescence is due mainly to the white-margined leaf bracts accompanying the small white flower, just as the showiness of the poinsettia, another spurge, is due to its colored floral leaves. In gathering these flowers for decoration care should be exercised not to get the milk in the eyes or on thin portions of the skin such as the face and arms because of its irritating effect.

The candelilla (*Euphorbia antisyphilitica*) is a member of the spurge family. It is a plant of considerable commercial importance because of the wax which accumulates on the stem in the form of a white powder. When the plants are boiled the wax rises to the surface and is collected. The refined wax is used in waterproofing raincoats, tents, and awnings. It is also used in the manufacture of electric insulation, varnish, phonograph records, celluloid articles and shoe polish. The fibre of the plant makes an excellent paper. This plant grows abundantly along the canyons of the Big Bend section of Texas in dense tussocks of slender, green, leafless, hollow stems two to five feet high. No attempt to cultivate it has yet been made.

Photograph, Keystone View Co., Inc.

Oleanders in bloom along the street in Galveston.

Custom smelter at El Paso, the largest in the world.

# MANUFACTURING IN TEXAS

UNTIL about 1900, Texas' three great interests were the three "C's", cotton, cows and corn. With the coming of the oil boom a fourth item was added to this list, but until recently no one seriously thought of Texas as a manufacturing state. Six things are important in profitable manufacturing, and a successful industrial section must have some, if not all of them. These things are raw materials, labor, power, transportation, capital, and, finally, the ability and disposition to use the others in making goods. Texas has always had an abundance of certain kinds of raw materials, and in recent years, cheap power; a large part of the state has good transportation facilities, and there is considerable available labor, but the state as a whole has been lacking in capital, in experience, and in interest in industrialism. As some one well said a few years ago: "Texans are not 'industrial-minded.'"

All this is changing now. It may surprise you to know that the U. S. Census of Manufactures for 1925 reported 3,606 factories in Texas, with a total value of products of $1,237,953,000. This made the state rank thirteenth in value of products. In this year the total value of crops was less than 600 million dollars. This does not mean, however, that manufacturing was twice as important as farming. The factories used materials produced by farmers, ranchers, miners and other manufacturers, worth 845 million dollars, so that the "value added by manufacture" was only $392,809,000. Of this sum over 116 millions were paid for wages, other millions for steam or electric power, still other millions for rent, interest, taxes, containers for the products, and advertising, and the remainder was profit. Since manufacturing in Texas is increasing the figures would be greater now, but we cannot tell how much. So we must use the 1925 reports.

Nearly a hundred kinds of manufacturing were carried on in Texas, ranging from the manufacture of artificial limbs to wood-carving; from making wooden boxes to electrical machinery; from refining petroleum to spinning cotton. In some industries there was only a single factory, but there were 419 bakeries, and 413 newspaper or magazine publishers. Only concerns manufacturing goods

worth more than $5,000 a year were counted, but there were many smaller establishments. Cotton gins were not counted, nor were small neighborhood grist mills or saw mills.

### A FEW INDUSTRIES PRODUCE THE LARGEST VALUES

The first thing to be noted is the fact that more than half of the value of goods was produced by three industries. Oil refining led with over 488 millions, cotton oil and meal was next with over 86 millions, and slaughtering and meat-packing was third with over 79 millions. There were only 257 establishments engaged in these three industries. It is clear then that the other 3,349 establishments produced less than half of the total value of goods. It is chiefly the oil industry which gives the state its rank.

Texas manufactures amounted to just under two per cent of the total production of the United States, but this shows a great gain over previous reports. In 1904, Texas produced only $150,538,000 worth of goods and ranked twenty-second. In 1925, the figures showed that Texas was increasing in manufactures more rapidly than any other state, with California second. Since 1925, progress has probably been quite as rapid. Texans are becoming willing to invest their own capital in something other than land or cattle, and Eastern capital is also coming to Texas.

### WHICH ARE THE MOST IMPORTANT MANUFACTURING CENTRES?

Dallas manufactured goods of the greatest value in 1925, with Fort Worth second. The products in each were worth over a hundred million dollars. Houston was not very far behind, followed in order by San Antonio, Wichita Falls, El Paso, Galveston, Sherman, Beaumont and Waco. No other city produced as much as ten million dollars. Doubtless the figures are no longer correct, but they are the latest official estimates we have.

Another difficulty in ranking Texas cities is that many large establishments are located outside the city limits, though the industry really belongs to the nearest city. However, many large plants are situated in small towns, which depend in large measure upon them.

### CHEAP POWER ONE OF THE GREAT ADVANTAGES

Texas has no great water power resources, but there are several plants on the Guadalupe and Comal rivers, and others are projected here and elsewhere. Texas does have, however, cheap fuel in the form of oil and natural gas, with which to develop steam or electric power. There is much coal, so far little utilized, and enormous quantities of lignite, now beginning to be utilized. At Trinidad and New Braunfels are plants which generate electricity from powdered lignite fed through pipes. This development will be watched with interest.

Texas is becoming covered with a network of electric wires, perhaps 15,000 miles in all. In every direction one sees the high towers carrying the wires stalking like giants across the fields. Some towns receive light and power from generators a hundred miles away or more. Nearly a thousand towns are lighted by electricity, and half the people of Texas may have this comfort and convenience in their homes, if they wish. Let us now examine some of the more important industries.

### LUMBER AND MEAT-PACKING ARE AMONG THE OLDER INDUSTRIES

The first industry to develop on a large scale within state boundaries was the sawing of lumber. The whine of the sawmill is still heard in East Texas and elsewhere. About six-sevenths or a little more of the cut is pine, with a little cypress, and the remainder is hardwood, chiefly oak and gum. There were about 200 commercial sawmills in operation in 1925, and the product, over 47 million dollars, was fifth in value among Texas industries. In addition there were over a hundred planing mills with a product worth 13 million dollars more. Add to these the products of the box and barrel factories, to say nothing of furniture, and you see that the trees of Texas are really important.

Slaughtering and meat packing is another old industry, as industries go in Texas. There were 27 plants in all in different sections of the state. The largest are at Fort Worth, but there are important establishments at Dallas, El Paso, San Antonio, Houston and Amarillo. The product is third in value, as mentioned above, over 79 million dollars. There seems to be no reason why more of the cattle grown in Texas should not be slaughtered here.

Texas has become an important wheat-growing state, producing both hard and

# SOME TYPICAL ELECTRIC PLANTS

The plant at Trinidad Station which uses powdered lignite fed through pipes as fuel to generate electricity.

The plant of the Houston Light and Power Company.

The enormous plant at Ft. Worth, Texas is covered with a network of electric wires which provide a large part of the population with light and power for the household, or for manufacturing [illegible]. There are also a few hydro-electric plants.

soft wheat, and some of the Texas flour mills do a large export business. They consume three-fourths of the state's wheat and even import some. There are large mills in Dallas, Sherman, Wichita Falls, Fort Worth, San Antonio, New Braunfels, Houston and elsewhere. There were 90 of the larger mills, in 1925, and the value of flour and feed was $54,528,000, making the industry fourth in rank. In addition there were many small neighborhood mills doing custom grinding, which are not counted in the total.

### MILLIONS OF DOLLARS ONCE THROWN AWAY

Only a few years ago, cottonseed were thrown away. Now cotton oil, cake and meal made in Texas were worth 86 million dollars in 1925, and the industry ranked second in the state. The oil is used for food, in cooking, and in soap and paint making, and the hulls, cake and meal are fed to cattle or used in making fertilizer. Most of the lard substitutes, such as cottolene, contain much cottonseed oil.

When the seed come to the oil mill, they are first cleaned, and the short fibres are removed from the seed by special gins, or delinters. These "linters" are used in making batting or padding. The hulls are then removed from the seed, and the meats may be crushed raw, or may be cooked first. The oil is forced out under great pressure, and what is left is called cake. The resulting oil is dark in color, and unpleasant in taste and odor. It is treated chemically, and most of the impurities sink to the bottom. The resulting yellowish oil may be further purified and filtered by fuller's earth, so that a limpid white oil results. In 1925, there were 167 establishments in Texas. Dallas is the great centre of the industry, though there are large refineries elsewhere.

The sixth industry in size is the construction and repair of railroad cars, which had a value of more than 43 million dollars in 1925. Since Texas has more miles of railroad than any other state you can see why this industry would be important.

### OIL REFINING IS THE LARGEST INDUSTRY IN TEXAS

Now we come to the largest industry in Texas, the refining of petroleum. The oil as it comes from the wells is not a single substance. The chemist says that it is a mixture of various hydrocarbons. This means that it is composed of several compounds of hydrogen and carbon in varying combinations. The oil from no two fields is exactly the same, and impurities such as sulphur and nitrogen are often present. Some of the crude oil is burned to make steam, is used in road-building, or for other purposes, but the greater part goes to the refineries. In several chapters you are shown pictures of the oil industry.

Petroleum refining is a very complicated process which cannot be understood without many pictures and diagrams. In fact, considerable knowledge of science is required to understand the many processes fully, and a visit to a refinery would be necessary for full comprehension. However, a basic process is what is known as "fractional distillation."

### JUST WHAT IS MEANT BY FRACTIONAL DISTILLATION

The different substances in the oil boil, that is, change to gases, at different temperatures. In fact, three of them are gases at ordinary temperatures, and are saved with difficulty. The process is something like this. Crude oil is placed in a still and low heat is applied. Gasoline vapor comes off, and this vapor is condensed by passing the pipes through cold water. At a higher temperature the naphthas, such as benzine and kerosene, come off and are likewise condensed. At yet higher temperatures, often in a separate still, the lubricating oils come off, and out of what is left come many products such as paraffin, asphalt, vaseline and dozens of others.

The process is not quite so simple as this, for none of the products of distillation is pure, and all must be treated further, but this process is a fundamental one. By special treatment the naphthas can be made to yield considerable gasoline. This process is known as "cracking." If you can get the opportunity to visit a refinery, do not let it slip. Most of the refineries are situated on the coast, and the oil is brought to them through pipe lines. Some, however, are near the oil fields. There were 63 refineries in 1925, and, as said before, the product was worth nearly 500 million dollars, and it is considerably greater now.

These six industries make up nearly two-thirds of the value of manufactures of the state. Let us now mention some

# WHERE CRUDE OIL IS BROKEN UP

Photograph, Higginbotham.

**Crude oil has comparatively few uses but the refinery breaks up the mixture into gasoline, kerosene, lubricating oil and many other substances. This is one of the large refineries in Dallas.**

**Port Arthur owes much of its growth and present prosperity to the fact that it is a centre of oil refining, and also a great oil port. This is part of the refinery of the Texas Company.**

The process of oil distillation is briefly described in the text. This is a view of some of the steam stills of the refinery above. The oil goes through many rather complicated processes in the refinery.

# WHAT BECOMES OF TEXAS COTTON

Unfortunately such a sight as this view of an El Paso cotton mill can be seen in few other places in Texas, for the state manufactures only a very small part of the large cotton crop it produces.

On the wharves at Houston this is a common sight during a considerable part of the year. However, the bales are quite likely to be square for the round bale has not superseded the older form of packing, though it has some distinct advantages. Houston sends cargoes of cotton to many ports in several continents.

Upper photograph, courtesy El Paso Gateway Club.

# WHERE GRAIN IS HELD IN STORE

The South Plains are becoming steadily more important as a grain-producing area. This great elevator at Lubbock was built to hold 500,000 bushels. The Panhandle and the South Plains region have become the wheat sections and raise an excellent quality of hard wheat. The man and the team show the size of the elevator. There are nearly a hundred flour mills of considerable size in the state.

North Central Texas also produces wheat in quantity, and since Ft. Worth is a great railway centre it is not surprising to see this enormous elevator and there are others. Though the state exports wheat and flour, other wheat is imported, and it seems that production and consumption nearly balance.

Upper photograph, Daniel Studio, Lubbock; lower, courtesy Ft. Worth Association of Commerce.

of the many industries which make up the values of the other third.

### TEXAS PEOPLE DO CONSIDERABLE READING

There were 413 publishers of newspapers and magazines in Texas in 1925, and the value of product is given as over 27 million dollars. There were more than 413 periodicals, for many publishers issued more than one paper or magazine. We are told that there were 879 publications in 1928, issued in 530 cities and towns. If we add 220 book and job printing plants, with a product of nearly 11 million dollars, we see that the whole printing industry is a large one. Texas has several newspapers which compare favorably with those published in much larger cities, and there are other creditable publications.

Foundry and machine shop products came next with $26,528,634, made in 124 establishments. There were 419 bakeries producing nearly 23 million dollars in value. These range from the small bakery, making just over the $5,000 limit, to the great establishments which send their bread, cakes and pastry hundreds of miles. Texas women do not bake as much bread as they used to do. Hot biscuits are not so common.

The tenth industry in size is cotton goods, with a product worth nearly 20 million dollars. There were 24 cotton mills in 1925, and several have been built since. The largest are in Dallas, Bonham, Denison, Fort Worth and Corsicana, but they are fairly well scattered. Some spin the cotton only, some spin and weave, and others make special products. Texas manufactures only about one-fortieth of the cotton it grows. There are several mills which knit silk hose, underwear or neckties, and the rayon industry has begun to attract attention. Rayon, as you are told in The Book of Knowledge, is an imitation of silk made from cellulose.

### COTTON MANUFACTURING SHOULD INCREASE IN THE STATE

This industry should increase in Texas, as the state has nearly every advantage mentioned at the beginning of the chapter,—abundant cotton, sufficient labor, cheap fuel, good transportation and adequate capital. Only the ability and the inclination to use that capital in this industry have been lacking. There is no good reason why Texas should not equal or surpass the Carolinas, which now rank second and third in the industry.

We cannot mention every industry in the state. Elsewhere we speak of the refining of sulphur, and of the smelters at El Paso and Amarillo. Where only a few factories are engaged the census reports do not give the figures, as they are not supposed to show what any individual establishment produces. There are sugar refining plants at Texas City and Sugarland, and now Houston has one of the largest mattress factories in the world. There were 87 other factories which made mattresses and bedding, but most of them were small.

### SOME OTHER INDUSTRIES WHICH SHOULD BE LARGER

Ice worth over 15 million dollars was manufactured in 233 plants, and ice cream worth nearly six million dollars in 91 plants; soft drinks worth over eight million dollars were made, as well as five million dollars' worth of candy in 50 factories, but the canning industry reported goods worth only $1,745,979. This ought to be many times as much. Another industry much smaller than it ought to be is butter and cheese, of which only $7,500,000 worth were made in 28 establishments. Texas should be a great dairy state. It does in fact have the largest dairy in the United States at Falfurrias.

There are glass factories at Wichita Falls, Three Rivers and Texarkana, and cement plants at Dallas, Fort Worth, San Antonio, El Paso and Houston. The last named uses the limy mudshell from the Gulf. The total product was over nine million dollars in 1925. Fifty-four plants made clay products worth nearly seven millions, and five establishments made plaster, plaster board and flooring worth nearly four millions. This industry is growing rapidly.

### SOME INTERESTING FACTS ABOUT CLOTHING

Men's clothing worth nearly 10 millions was made in 42 establishments, but 17 manufacturers of women's clothes reported only $1,392,660; three factories made hats and caps worth $190,446, but the women's hats were worth more than a million. Toilet goods were worth only $191,000.

We are almost forgetting some large industries. The establishments which clean and polish rice, 12 of them, reported values of nearly 11 millions, and

# WHERE MEN MAKE STONE

You are told in The Book of Knowledge how cement is made. Texas has need for a great quantity of it. This is a great plant in El Paso which turns out many tons in a year.

The cement roads which are built every year require an immense quantity. Texas has an enormous supply of the materials from which cement of excellent quality can be made. This is one of the large plants in Dallas which has the advantage of the raw material near by. There are plants in other cities.

Upper photograph, Ewing Galloway; lower, courtesy Dallas Chamber of Commerce.

nine wood-preserving plants turned out a product worth over 14 millions. In spite of the fact that Texas had some beautiful woods, the 24 furniture factories reported goods worth less than four millions. This ought to be much greater, and also the pottery which was only $139,974. Texas has much clay suitable for making pottery.

### Something about wages in different industries

There are dozens of other industries, but let us now notice some other things about the industries. There were 106,792 wage earners in Texas factories. The largest number was in lumber, 18,200, and the smallest 13, in toilet goods and in artificial limbs. The last named, however, were rather well paid, for they received $16,562 in wages. Though the number engaged in lumbering was the largest, these men did not receive as high wages as those in some other industries. For example, 14,962 men in car construction received over 20 millions in wages, and 10,902 workers in petroleum refining received $15,933,452, while the lumbermen received $14,949,971. On the other hand the wages were higher than in the cotton mills, where 4,613 workers received $3,105,174. The highest average wage was in photo-engraving, over $2,200 a year, with the manufacturers of jewelry next. These are small industries, where high skill is required.

Photograph, courtesy Stuart McGregor.
**Carbon black is manufactured from waste natural gas. This plant is near Borger.**

A part of this difference in wages is also due to regularity or irregularity of employment. In an industry which operates only a part of the year high daily wages do not mean high yearly wages. In a state where the great bulk of the population is rural, wages in manufacture are governed largely by the return which the farmers receive. Wages must be high enough to draw workers from the country. If farming is profitable, wages in town must be high, and when farming is unprofitable, lower wages will draw workers to the town.

Though Texas is not yet a great industrial state, it seems certain that it is destined to become one. There are some obstacles, but the natural advantages are so great that factories are sure to spring up in great numbers. The growth of manufacturing will help the farmers also, and add much to the wealth of the state. While the state is likely to continue as the greatest agricultural and cattle state, there seems to be no good reason why it should not be one of the greatest manufacturing states also before many years.

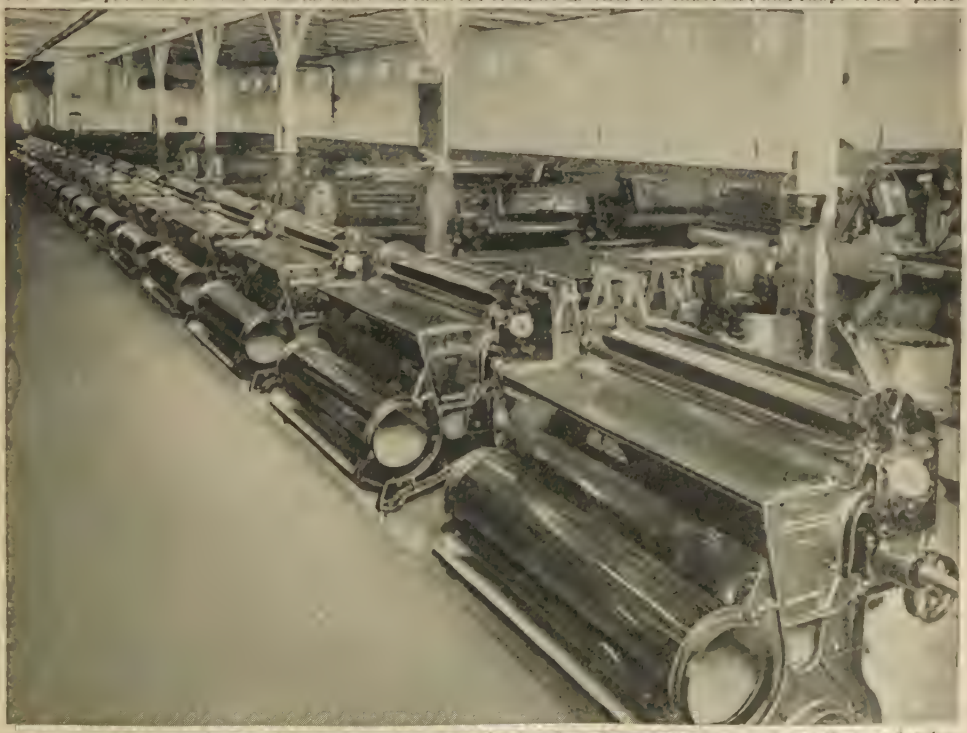
### Some differences in kinds of manufactures

Two states may produce manufactured goods of almost equal value, and yet the amount and rate of wages may be widely different, due to differences in the important industries. In some the value of the raw material is greater than the "value added by manufacture." In another the value of the raw material is low, but so much labor is spent upon it that the "value added by manufacture" is high. It is clear that the first industry cannot employ so many people nor pay them such high wages as the second.

Let us take some examples. A cotton factory puts the cotton through some simple processes and makes yarn which is not worth so very much more than the raw cotton. A manufacturer of surgical instruments or of spectacles, expends a great deal of labor upon the raw material. If a manufacturer of stoves and one who makes clocks produce goods of equal value, it is easy to see which will pay a larger amount in wages. So far most Texas manufacturies—and those of the whole South for that matter—have been those which do not expend much labor on the raw material.

# WHERE COTTON GINS ARE BEING MADE

This is the foundry of a great factory which manufactures cotton gins. The heavier parts of the machines are cast from molten metal in these shallow frames called flasks, which are filled with moist sand, and into which patterns of wood or metal had been inserted to make cavities the exact size and shape of the parts.



The parts of the machines which have been cast in the foundry above have been put together, and other parts added. Here the finishing touches are being given, and soon the completed machines will be scattered all over the cotton-growing regions. Cotton gins are found in almost every southern village.

Photographs, courtesy Dallas Chamber of Commerce.

# "GIMME A TICKET TO TEXAS"

Courtesy Pennsylvania Railroad, from a drawing by Worth Brehm.

HE was perhaps eleven, and he made his request with elaborate carelessness. "Gimme a ticket to Texas."

"Where to in Texas?" the ticket seller asked smiling.

"Oh, anywhere in Texas."

"Half fare to Texas," he was informed with mock gravity, "will cost you $35."

The young man produced a roll of bills.

Later, under the kindly questioning of station authorities, he confessed that he had run away from home after scraping together enough cash to get to Texas, his ideal of a state to live in, as, indeed, it is to all who really know it.

He, with the money, was returned to his parents.

Viaduct connecting Galveston Island with the mainland.

# TRANSPORTATION—COMMERCE

THE story of man's efforts to conquer space and time began, in Texas, with the coming of the jingling mule-trains of the Mexican silver mines. After American settlement, the development of the country was, for long years, hampered by lack of good roads. Not until the coming of the railroads could the farms easily get their raw materials to the cities to be transformed into articles of commerce, nor could the towns market the output of their manufactories. In the course of our story, we shall outline how the state first encouraged the railroads to open the way for immigration, then, through its representative, Hogg, broke lances with them; and finally, how the Interstate Commerce Commission has been acting as mentor to the present big railway systems. We shall note how the development of her ports has made possible the water transportation of Texan products to every quarter of the globe; and finally, we shall observe how good roads and the use of motor trucks is supplementing the work of the railroads and steamships.

We have seen the character of the country in the chapter on the geography of Texas. No one who sets out from San Antonio to-day, in a springy berth with an electric reading light at his head, or glides swiftly over the hard roads in a motor car, would believe what traveling was like in the days of the mission fathers. One good friar has recorded in his diary that he had to follow the trail through the woods toward San Antonio by the occasional white blaze on a tree trunk, and thence across the prairie by a way that was liquid mud when it rained, and which dried into furrows of iron. In our pageant of the years, let the black-skirted fathers represent the traveler of the century before the coming of the farming settlers.

Our next picture would show the Mexican freighters taking corn to San Antonio by ox-cart. Austin's colonists, once they had crossed the Sabine, came along the San Antonio road on horseback or with covered wagons drawn by mules or oxen. The Old San Antonio Road is older than Texas, and it was latitude and longitude to the pioneers. It had been made by the Spanish traders who traveled from San Antonio to Nacogdoches, crossing the Colorado River at Bastrop. A few of

the pioneers, if they were spared hurricanes and the hostilities of the red men, arrived by way of the Gulf.

In those pioneer times, women travelers, when they came to the ford of a river, had to tuck their long skirts up on the high front seats to keep them dry, and if a wagon got stuck in the mud, there was nothing to do but wait, possibly a week, till the sticky soil was sufficiently dry to be mined out from under the wheels. The days of the pony express mail couriers to Southern California and the overland stage coaches that followed the "prairie schooners" were frequently enlivened by meetings with highwaymen in black masks who, with a gun in each hand, relieved travelers of their surplus valuables.

### Freighting by ox-wagons in the early days

The first trade of the very early days was that of the Indians from the silver mines. The next wealth to be transferred to market was that of the communal cattle drives. Cotton was not a large item of commerce until after the Civil War, nor could the vast quantities of farm products raised to-day have been taken to the markets of the world until after the coming of the rails. Freighting by ox-wagons often consumed months on the trip from San Antonio to Galveston and return, and the charges were twenty times what railway freight rates are to-day; while the four-mile stage coaches running over regular routes asked perhaps three times the present railway passenger fares.

In the sixties the mail line from San Antonio to San Diego, by "cart" and horseback, over the route later followed by the Southern Pacific, took twenty-five days of traveling, night and day. The first stages were Concord coaches drawn by six wild mules. Running through uninhabited country infested with Mexican bandits, and with Indians intent on exterminating white settlers, the one to make the first trip was guarded by a party of eighteen armed men under "Big Foot" Wallace, the ranger and Indian fighter. Stage stands were eventually established every thirty or forty miles.

The old time freighters used to load their consignments into huge prairie schooners twice the size of the present army supply wagons. Often the wagon-beds were twenty-four feet long, the wheels stood as high as a man, and the hubs were enormous. The freighters would pile sixteen bales of cotton to the load, and it required sixteen mules to draw such a wagon. It took the entire weight of a strong man to operate the heavy brake, and if the brake gave way on a down grade, there was danger that both mules and muleteer might be crushed to death. As a protection against thieving redskins, wagon trains were sometimes composed of as many as forty vehicles, and the teams would be strung out along the trail for several miles. In case of an Indian raid, the wagons were driven into right and left semicircles to form a corral for the animals. The trail drivers gave heavy bonds as guarantee of their responsibility. The goods were loaded out of bonded warehouses belonging to commission merchants, and customs houses were established on both sides of the Rio Grande.

### Trail opened by the California forty-niners

The Old Spanish Trail ran from what is now Port Arthur and Beaumont, via Houston, to San Antonio, then swung through what we know as Kerr, Sutton and Reeves Counties to El Paso. In the southwest, where the scarcity of water was ever a hardship, the year 1848 saw the first important trail between Texas and New Mexico. Emigrants of the California gold rush opened an important trail in 1849 between San Antonio and what is now El Paso. Through the Big Bend, a route across the Davis Mountains, where water could be obtained, was adopted as the permanent military road and overland mail route. Prior to the Civil War, freight was carried between San Antonio and Chihuahua on the thousand-mile route through the Big Bend, where the jingle of Mexican mule trains loaded with gold and silver, copper and lead had already splintered the big silences; but by 1862, the wartime imports from Mexico deepened trails to San Antonio via Brownsville and Laredo.

### Discomforts of train travel when rails were a novelty

At the time Austin's colony was preparing to rebel against Mexican rule, those who received news from the east were astonished to hear of the first steam railway tried out in England. It seemed as wild a notion as Darius Green's "flying machine" and the talk of sail-wagons.

# TRAVEL IN THE GOOD OLD DAYS

**Once this was the only way to go West. Nowadays most people go by train or motor-truck, but occasionally a family travels in the old way. To-day the road is very different from the old.**

**This old stage-coach used to run on a regular schedule if it did not overturn or get stuck in the mud. It seems a pity that it was allowed to fall into such a state of dilapidation.**

**One who visits Austin to-day will find it difficult to believe that this was the station his grandfather, or perhaps his father used, when he came to town in the early eighties. Electric cars were not used anywhere until 1888, and motors did not become common until about twenty years later than that date.**

Top photograph, courtesy Stuart McGregor; others from Jordan Company.

The early days of railroad building in Texas meant a conquest of the wilderness. The problem was how to get the rails laid somehow, and prepare as quickly as possible for the needs of a pioneer population. The first cars rolled along uneven rails like ships in a storm, and passengers had to change trains every so often. The surveyors had the advantage, in Texas, of being able to select a way over land which had no need of tunnels or mountain switch-backs, though floods have sometimes torn away the bridges. The builders have always had a supply of negro, Mexican and Indian labor. But it was necessary to maintain armed guards to protect those first trains from the tramps and desperadoes who infested the borders until the Rangers cleaned them out.

### THE EARLY RAILROADS AND THEIR DIFFICULTIES

The first railroads were only local lines. The Buffalo Bayou, Brazos and Colorado was begun in 1840, but the first train did not run over the twenty miles of completed track until 1853. The same year, another road was begun at Houston with the idea of crossing the state to its northern boundary. This was the Galveston and Red River Railroad, whose name was changed three years later to the Houston and Texas Central. Its rival line likewise changed its name and became the Galveston, Harrisburg and San Antonio. Many other railroads were chartered, but few were built. During the Civil War railroad building ceased and did not again become active until near the close of the reconstruction period, and in 1870 the state had in operation but five hundred miles of rails.

Prior to the Civil War, there had been difficulty in raising the money to build. To meet this difficulty, state aid was extended in the form of land grants. There were also individual gifts made, stock was sold to residents along the routes, often paid for by the labor of slaves in making the roadbed, and city and county bonds were issued for the benefit of the railroads. The state also invested in railroad bonds nearly $2,000,000 of the permanent school fund, which included part of the money paid by the United States for land that became the eastern half of New Mexico, and parts of other states. Some of these loans have been repaid with interest by the railroads.

The first land grant law, that of 1852, gave any railway company laying as much as five miles of tracks a gift of eight sections of land for every mile laid. A law passed two years later amended this arrangement: any road completing thirty-five miles was to receive a gift of sixteen sections for each mile. In 1873 the International-Great Northern was given tax exemption for twenty-five years, and in 1876 a law was passed stipulating certain provisions for selling the land granted the railroads. During the thirty years following 1852, Texas railroads received land in blocks of from 49,000 to 5,167,000 acres and the forty-one roads of the state had between them received nearly 36,000,000 acres.

The Houston and Texas Central, alone of all the roads in Texas, recovered sufficiently from the Civil War to push its lines on to Bryan in 1867, to Calvert in 1868 and to Denison in 1873. Here it met the "Katy," connecting Texas with the north and east. The Texas Pacific was organized in 1871. In 1872 the International-Great Northern was run from Kansas City to Laredo, and a junction with the Mexican National. By 1880 the Southern Pacific was completed from California to El Paso; the Harrisburg and San Antonio from San Antonio to El Paso; and the Texas and New Orleans from New Orleans to Houston. These and other Texan rails had by now become part of a steel network that reached across the continent. Through traffic from New Orleans to San Francisco began in 1883.

More and more tracks were laid, and as the local lines spread to the remoter districts heretofore reached only by dirt roads impossible when it rained, and to the logging camps of the pine belt, the population grew. By 1888 Texas had over eight thousand miles of rails, approximately half of the present total. To-day, while the shining tracks reach everywhere from the new oil towns of the Panhandle to El Paso and the mouth of the Rio Grande, the network is thickest in the Black Prairie and southward to Houston and Galveston. The roads running to the Gulf have a "downhill pull" that helps in delivering freight.

### TENDENCY TO CONSOLIDATION VIEWED WITH ALARM

Where each little stretch of road was individually operated, a passenger cross-

# HOW OIL REACHES THE CONSUMER

From the refinery much of the oil is pumped into tank steamers which take it all over the world. This is the Texas Company's wharf at Port Neches, and the inset shows a closer view of the tanker Texas, one of the great fleet which carries thousands of gallons of what has become one of the necessities of life.

People in the interior also need oil and gasoline. These tank cars may be seen on every railroad. Sometimes one may see a train made up almost entirely of tank cars. If your eyes are sharp you can see that the nearer one carries 8,082 gallons, enough to run the average motor car four times around the world.

The small dealer often gets his supplies of gas and oil from a tank truck like this, which is filled from the large stationary tanks into which the tank cars or tank steamers are emptied. The oil industry is well-organized and serves its patrons with little delay, and much of this regularity is due to the truck.

ing the state had to change trains every little while, transferring his baggage each time, and travel was a hardship. It was to provide through lines of travel that the roads first began to unite. This they did by lease, by purchase and in other ways. In the late seventies the roads of a given section tended to consolidate for the sake of reducing expenses and of securing monopoly control over rates. At this the public became alarmed.

The railroads of the nation have been united into a number of great systems. The railroads of Texas are included in six of these systems, and there are several other really large roads as well, while over a hundred small branch lines and logging roads extend the service to the less populated regions. The systems are: (1) The Southern Pacific, with its "Sunset Limited"; (2) the Missouri Pacific, known for its "Sunshine Special"; (3) the Atchison, Topeka and Santa Fe; (4) the Missouri-Kansas-Texas, or "Katy"; (5) the St. Louis Southwestern; and (6) the Chicago, Rock Island and Pacific Railway Company. The St. Louis-San Francisco is one of the big roads that is not a system. To-day Texas has more railroads than any other state, claiming a total mileage of over twenty thousand (including sidings), and the United States of America has more railroads than any other nation of the world.

### S. P., "KATY," AND MISSOURI PACIFIC, ROCK ISLAND, SANTA FE AND OTHERS

The old Galveston, Harrisburg and San Antonio became the keynote to the present "Sunset Route." To-day the lines controlled by the Southern Pacific system sweep across the state from Beaumont to El Paso, sending branch lines to the Gulf ports and important cities of eastern Texas. It also controls the Morgan Steamship Lines from Houston and Galveston to New York.

The Missouri Pacific system, whose "Sunshine Special" is operated in two sections into both West and South Texas, enters the northeast corner of the state at Texarkana and reaches one long finger across to El Paso as the Texas & Pacific; and one, the International-Great Northern, southward to Laredo, with connections to all the principal Gulf ports. The Panhandle and Santa Fe portion of the Atchison, Topeka and Santa Fe system, coming down from the northeast corner of the Panhandle, past Amarillo to Lubbock, rays out in all directions to the new oil towns, for nearly a thousand miles within Texas borders. (Before 1914 the name of the company was the Southern Kansas Railway Company of Texas. It had operated since 1889.) The Santa Fe system also controls the Gulf, Colorado & Santa Fe, which, starting at Galveston, divides into many branches, reaching most of the larger towns in the northern half of the state. During the summer of 1928 it absorbed the Orient of Texas, extending from a connection with Kansas City at the northern boundary of the state southwestward to a junction with the Southern Pacific system at Alpine.

The rails of the Missouri-Kansas-Texas, otherwise known as the M-K-T or "Katy," traversed Kansas when the state was but ten years of age, and went exploring through a part of Oklahoma which was at that time included in Indian Territory. In 1923, it took over rails reaching down to Wichita Falls, and now operates lines extending south through the cotton belt to San Antonio, Houston and Galveston.

The St. Louis Southwestern loops across the state from Texarkana to Sherman, sending branches curving southeastward through Lufkin and southwestward through Waco. The system includes the San Antonio Southern and the Shreveport, Houston and Gulf, whose names tell their own story. The first line of the present system to enter the state was incorporated in 1892. Plans of a merger of the "Katy" and the St. Louis Southwestern were proposed in 1927.

As for the Rock Island Lines in Texas, built by the Chicago, Rock Island and Texas Railroad Company, they include a branch straight west across the Panhandle, another into the Brazos Valley and, in particular, the Chicago, Rock Island and Gulf lines southward through Dallas. After the financial panic of 1907 and the resulting slump in traffic, the Rock Island lines sought to increase freight traffic by encouraging dry farming in the Southwest. It therefore exhibited a "farm special," a baggage car arranged to display the finest farm products that could be raised in that part of the country.

The St. Louis-San Francisco, crossing the Red River at two points, sends one line southeastward through Paris and Fort Worth to Menard, and one through

Sherman and Dallas to San Antonio. It sends another line through Quanah into the Panhandle.

### GOVERNOR "JIM" HOGG TAKES ISSUE WITH THE RAILROADS

Forty years ago the freight rates made it impossible for most Texas farmers to market their crops at a profit, and this in turn retarded the development of the towns that depended on their trade. Rates were high, and sometimes the charge for a short distance was larger than that charged for a much longer haul when there was competition. Rebates were granted to favored shippers and poor service was given, and many people began to believe that the railroad had been a curse rather than a blessing. Here was a state with ports that should have given her access to all the markets of the world, and possessed of almost unlimited raw materials, cut off by unfair freight rates from the possibility of selling that produce to those markets. Matters came to a climax when the railroads formed pools for the purpose of keeping up their freight rates.

Now the Constitution of 1876, which declared the railways to be public highways, allowed the legislature to control their rates. Governor James Stephen Hogg had cited in his campaign speeches that: "Railways are public highways. . . . Public highways changed, not in principle, but in condition and methods of use." He had been elected Governor as champion of a Texas Railroad Commission, with power to fix the rates that could be charged, break up the pools and force the railroads to surrender certain tracts of public lands. In 1891, he appointed three men for this task—the Hon. L. L. Foster, who later became president of the Agricultural and Mechanical College, Judge W. P. McLean of Fort Worth, and Senator John H. Reagan, who resigned his post at Washington that he might serve as chairman of the Commission. Later the railway commissioners were elected by popular vote and were given power to control the issuing of railroad stocks and bonds.

The work of the Railroad Commission was, on the whole, successful, and the people benefited thereby, particularly after more power was given by Congress to the Interstate Commerce Commission, which controls the railroads of the nation. With the passing years, however, conditions changed. Railroads have been so restricted that the managers declare that they cannot give proper service, and provide for new lines. At any rate, the fear of consolidation and combination has almost disappeared, and the roads have been able to save money by combining.

### HOW THE RAILROADS MANAGE TO MOVE PRODUCE AS HARVESTED

You know that when a crop of oranges or garden truck is ripe it is necessary to have freight cars ready to take it to market. That means that the railroads need to know a little ahead of time what crops will be ripe by certain dates. A wheat crisis came about in the fall of 1923, when the huge crop was ready for shipment and there was a shortage of cars in which to ship it. That led to the forming of a council of men who could notify the railroads well ahead of time what kind of freight cars and how many would be needed when crops were ripe. By the next year it was possible to notify them three months ahead as to the freight cars needed. To-day men with first-hand knowledge of all types of industries are grouped in regional advisory boards to supply information to prevent freight jams and car shortages.

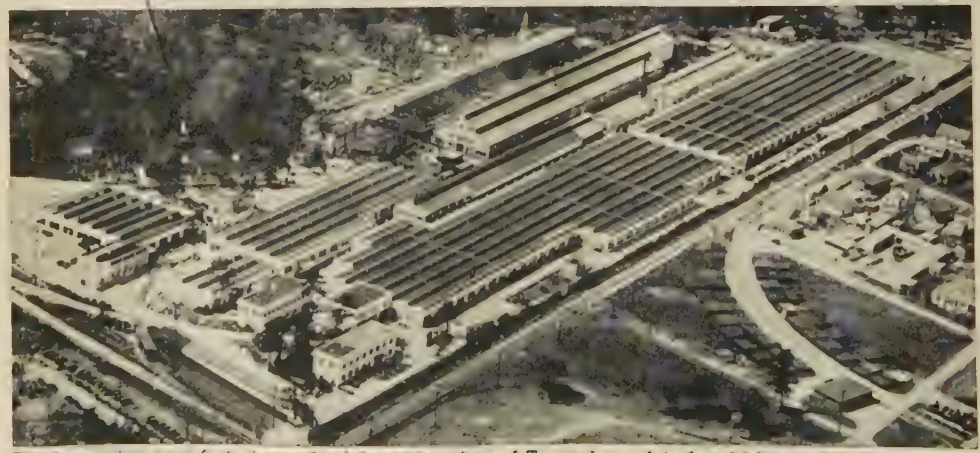
### MODEL FREIGHT CARS FOR EVERY PURPOSE

Picture the many kinds of freight cars seen in Texas to-day! There are cars with stalls for shipping race horses and polo ponies. There are ventilated slat-sided stock cars, and wire-netted cars with shelves for live poultry. There are insulated refrigerator cars for the beef shipped out of Fort Worth in such quantities, and for the grapefruit, peaches, strawberries, milk and cream, and perishable garden produce of the Magic Valley and elsewhere. These cars are cooled either by ice or by a circulation of cold brine in pipes white with frost. There is even an express refrigerator car especially valuable in the shipping of fresh fish. Perhaps you saw the iceless refrigerator car that carried twenty thousand pounds of frozen haddock to Fort Worth from New London, Connecticut, for the first time in 1927. Through the use of a porous manufactured sand, called silica gel, its temperature was held at 15 degrees Fahrenheit. One of the newest types is a container car, which is really a flat car carrying boxes of lettuce, spinach and the like, which may be lifted

# COMMERCE AND INDUSTRY IN HOUSTON

Though fifty miles from the Gulf, Houston has become a busy port. The shallow Buffalo Bayou has been transformed into the Ship Channel, where ships load for all parts of the world. Much cotton is loaded here.

Texas exports some of her own wheat, and wheat from farther north also comes to Houston. By means of this elevator the grain can flow directly into the hold of the ships to feed the hungry in Europe or elsewhere.



The increasing manufacturing and mining enterprises of Texas demand tools, which are what this enormous establishment produces in great quantity. People outside of the state seldom know of the extent and variety of manufacturing done in Texas.

Photographs, Calvin Wheat.

# THE SECOND PORT IN THE UNITED STATES

Much money has been spent upon the port of Galveston, both in dredging the harbor and the channel, and in building great piers. The piers are so long that several ships can tie up alongside each of them. Ships ply between Galveston and all of the principal ports of the world.

The largest item among Galveston's exports is cotton. As you see, these bales have been compressed into something less than half of their former size. Galveston is also the most important sulphur port, and is an important oil port. Many other things pass through the port. The imports are much less than the exports.

Photographs, courtesy Missouri Pacific R.R. and Galveston Chamber of Commerce.

by cranes and set on motor trucks at the market end of the line to save loading and handling the goods. There are also cars with cone-shaped spaces in the middle for the ventilation of vegetables. There are also all-steel hopper cars for hauling coal, and steel tank cars for oil, with safety valves, so that the gas may escape when the pressure becomes too high on the long sunny stretches. The railroads have spent millions of dollars in improved freight cars and engines.

To-day the railroads carry three times as much freight as they could a generation ago and at least twice as many passengers. The luxurious steel sleeping cars, with their baths and barber shops and sometimes even radio concerts, are kept to schedule by a complicated system made possible by the telegraph and telephone. The chances of a collision have been much lessened. Many safety devices have been installed. Automatic block signals protect the tracks of the principal lines. The locomotives are two and a half times as powerful as they were in 1900 and can haul heavier trains, and haul them faster. The freight and passenger stations are more conveniently arranged, and there are far fewer accidents—thanks to the block signal and other automatic safety devices. Time is saved on the fast lines by having tanks from which the engine can take its water "on the fly," and by a new automatic coaling plant that will be widely used. If a wreck should occur, a mammoth crane is soon on hand to pick the wrecked cars bodily off the track.

### Passenger and freight locomotives for speed and power

Some of the newest engines are fifteen feet high and over a hundred feet in length; their tenders are large enough to carry eighteen tons of coal at a time, and their tanks hold fourteen thousand gallons of water. Some of the locomotives, especially those of the Southern Pacific system, burn oil. The Santa Fe has a giant locomotive so long that, as it shoots along the rails, it reminds one of a musket barrel. The new Santa Fe locomotives are typical of the freight locomotives of to-day. The engine is heavy and has a boiler and fire-box designed for power rather than speed. The latest passenger engines are quite different; they are built for speed and some are capable of more than a mile a minute.

### River and harbor improvement before and since the world war

Before the Civil War, the state cleaned the rivers of sand bars, until small steamers could ascend the Trinity as far as Liberty, and the Sabine and Buffalo Bayou to the port cities. Cotton for New Orleans was often taken to Jefferson in ox-wagons and stowed aboard packets plying Cypress Bayou and the Red River. Despite occasional sand bars, the Brazos was navigable as far as Richmond, and the Guadalupe to Victoria. Galveston was, of course, the leading port city. But not until shortly before the World War was much done to improve the waterways. At that time, the Federal government began extensive work on the harbors of the Gulf Coast, spending millions of dollars building jetties and dredging at Sabine Pass, Port Arthur, Port Lavaca, Corpus Christi and Galveston. Even more recently it opened the Houston Ship Channel through Galveston Bay and up Buffalo Bayou.

### Some of the things Texas exports

If Texas had to keep all its oil and sulphur, cotton and cottonseed products, you might have to breakfast on cottonseed meal and dine on sulphur and molasses, while the state would have so much more than enough petroleum that this product would have to be given away. Happily the many railroads and harbor facilities make it possible for the state to send her surplus products to those states or countries that need them, and to import the necessities she cannot provide for herself. Indeed, she is bringing in many things that she could as well produce for herself. This outflow of exports and inflow of imports constitutes a commerce of enormous proportions. Her exports consist not alone of huge quantities of cotton and petroleum, lumber, wheat, rice, grapefruit, and early vegetables, wool, mohair, and other products named in the chapters on farming, mining and fisheries, but cottonseed meal products, milled lumber, refined petroleum, and various items described in the chapter on manufactures.

While Texas produces just about enough corn and wheat for her own use, she exports most of her petroleum, some of her pine lumber and nearly all her raw cotton, perhaps three times as much of her cottonseed products as she consumes

at home, and enough of her surplus beef to pay for the pork she buys from outside the state. While she has horses and mules to export, she imports most of her leather. She has a surplus of rice, but little sugar, no tea, coffee, nor tobacco worth mentioning. As for dairy products, she could easily produce more than enough butter and cheese, although, up to date, she has made only a beginning at so doing.

The splendid harbors of Houston and Galveston, Port Arthur and Corpus Christi (described in our chapter on the cities of Texas), occupy a strategic position. They serve as outlets for the vast territory lying between the Mississippi River and the Rocky Mountains and sloping gently down from Iowa and Nebraska. From these port cities the fat bales of cotton, the rich black streams from the oil fields, the yellow lumps of evil-smelling sulphur and the aromatic stacks of fresh-cut timber are hoisted aboard vessels flying the flags of many nations and bound for Mexico and South America, and, via the Panama Canal, the Pacific Coast and the Orient, as well as Europe and the British Isles. They also go to the home territory. In the value of her exports Texas ranks first or second among the states, according to conditions.

Port Arthur is the most important of the outlets of the Sabine-Neches Waterway. Beaumont, on the Neches River branch of the Sabine Waterway, and Orange, at the end of the Sabine Channel, are great lumber ports; Beaumont ships clay products, while Orange imports asphalt from the Island of Trinidad. Galveston, the world's largest cotton port, with its landlocked harbor and piers to accommodate a hundred ocean-going vessels, is companioned by a number of small ports. Houston owes its recent astonishing growth as a port city to the completion of the Houston Ship Channel, which makes it possible for large ocean-going vessels and oil tankers to come fifty miles inland. Its wharves and warehouses are of the most improved types known to-day, and Houston can store grain sent from Iowa, Kansas, and Nebraska, for shipment to Europe. Both Houston and Galveston are the terminals of oil pipe lines coming from as far away as Wyoming. Texas City, on the Galveston Channel, imports raw sugar from the West Indies. Freeport, at the mouth of the Brazos River, is the nearest port

**Houston people have always believed that the inland town was destined to be a great city. When the Ship Channel was completed in 1919, their hopes became realities. The public wharves and the turning basin shown here are the centre of a network of railway lines.** Photograph, courtesy Missouri Pacific Lines.

# THE SMOOTH ROAD HAS REPLACED THE INDIAN TRAIL

Before you a section of the Bankhead Highway in Palo Pinto County stretches across hill and prairie. On the left is a highway in the Rio Grande Valley. Photograph, courtesy Stuart McGregor.

# A MODERN METHOD OF TRAVEL

The United States Government maintains at San Antonio, Kelly Field, the largest aviation field in America. At all times of the day student aviators may be seen in the air, single or in formation.

Texans seem to be becoming "air minded," for many towns have established municipal airports and some citizens own planes which they use for their own convenience. This is the municipal airport at Houston.

Love Field, near Dallas, contains 173 acres, with many hangars. It is the terminus of the air mail route and is used by several commercial aviation companies. There are also excellent facilities for repairing and rebuilding planes. It is owned by the city and is one of the leading commercial aviation fields in the United States.

Photographs, courtesy respective Chambers of Commerce.

to the world's largest sulphur mine. The San Antonio district is also served by Port Aransas and by the Brazos Island Harbor at Port Isabel.

The foreign trade of the customs districts, chiefly raw materials for the manufacturing centres of Europe, has practically doubled in five years. The 1927 exports of merchandise alone from the Galveston customs district, which includes Houston, were over half a billion dollars. While the United States remains the greatest consumer of American cotton, vast quantities are sent abroad, chiefly to Germany and the British Isles and to Japan, though a certain amount is shipped to most of the countries of Europe. The foreign and coastwise traffic passing down the Houston Ship Channel also includes cottonseed products and huge quantities of petroleum. Incidentally, cotton growers in Texas, as elsewhere in America, have found that they can greatly increase cotton consumption by using waterproofed cotton bagging instead of the more expensive imported jute and burlap. A beginning has been made in the use of cotton bags for rice, corn and cotton seed, and cement.

The large cities are not the only centres of commerce. Towns like Mission, Harlingen, Edinburg, in the south, Denison, Sherman, and Paris in the north, San Angelo, the big wool market, Cuero, the turkey centre, Lubbock in the west, and dozens of others, also have commercial importance, made possible by the coming of good roads. Lubbock has over a hundred wholesale houses; and thanks in large part to the dry weather highways, goods may be shipped out of Lubbock to-day to every town on the South Plains; while in the south, a system of concrete highways will soon provide a line of pavement from Harlingen and Corpus Christi straight to Houston. Nor must one omit mention of the waterway, now under process of construction, which will constitute the first link in a sixteen-thousand-mile inland waterway system. The Arroyo Colorado is to be dredged to connect with the Gulf of Mexico and with the proposed Intracoastal Canal from Brownsville to New Orleans.

The Port Arthur Terminal of the Texas Company affords an unusually favorable site for refineries and also for shipping. Oil can be sent to any part of the world with a minimum of difficulty.

The greater use of motor vehicles has decreased the number of railway passengers, at least for short trips; but as for motor trucks, while they are carrying quantities of freight over short runs, the total volume of freight has grown so enormously that the railways have benefited in spite of such competition.

# ROADS THAT ARE AND ROADS THAT WERE

Cedar Hill Road, Dallas County, Texas State Highway System, is an excellent example of the kind of roads now being built by the State Highway Commission.

Mexican teamsters in the old days, before railroads or improved highways, transported most of the freight in such wagons as you see here, drawn by oxen or mules.

The Dallas-Ft. Worth Pike is one of the busiest roads in Texas, and can seldom be seen without hundreds of cars. At times the traffic resembles a procession, or rather two processions, one in each direction.

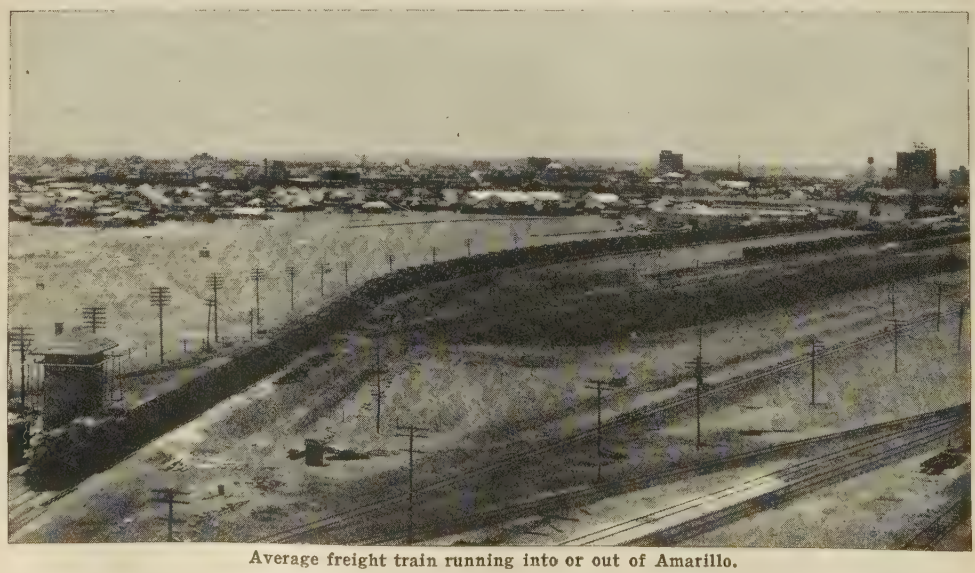
The middle picture is from an illustration in Sweet and Knox's On a Mexican Mustang through Texas.

Trolley lines are also regarded as bringing people to the railroad from the country. Motor trucks are now being used extensively at the big railway terminals, and the Pecos Valley Southern and the Orient railways use motor trucks to extend service into rural districts. Motor trucks also operate lines in rivalry to the rails on the thirty-mile run over the hard-surfaced state highway between Dallas and Fort Worth, for example. The magic development of the Rio Grande Valley, due in part to the improvement of Aransas Pass, owes a great deal to the coming of two hundred miles of concrete highway, through sand and mud formerly impassable in the rainy season. But we could not begin to name all the good highways. Since the Federal Aid Law of 1916, Texas has built six thousand miles of roads by federal aid, almost twice as much as any other state.

For the convenience of the tourist, everywhere along the way there have been established motor camps that vary from the furnished cabins that rent for several dollars a night to free tenting space. The gasoline tax amounted to nearly ten million dollars in 1927, of which three-fourths went to the highway fund. This with over thirteen millions from automobile licenses made over twenty million dollars for roads and bridges. Where there were, in 1922 but two thousand miles of completed roads, and less than five hundred thousand motor vehicles registered, inside of three years there had come to be ten thousand miles of highway, and there are now over a million cars. In Bexar County there is a hard-surfaced road to every farm, while Dallas, which may be taken as representative, has over sixty thousand registered motor cars, nearly two thousand trucks and something under a hundred motor busses. El Paso has fewer private cars, but its people are served by over four hundred busses, while San Antonio has between four and five thousand motor trucks.

The first trans-continental bus route in the United States, established in 1928, passes through El Paso and the Panhandle en route to Oklahoma.

The air mail routes, coming into the state from the North (with the air express service of the American Railway Express Company as far as Dallas and Fort Worth), run from these cities to Houston and Galveston, and through Waco, Austin and San Antonio to Laredo. In addition, the Army Airway leads from San Antonio through Fort Clark, Dryden and Marta to El Paso (en route to the West Coast). The National Air Transport, Inc., operators of the Dallas-Chicago air mail route, began a night service in the Spring of 1928 whereby mail leaving Dallas at 7 P.M. reaches Chicago at 7.30 A.M. The South Texas lines to San Antonio and to Houston were put into operation about the same date by the Texas Air Transport Company, and connect with the above named N. A. T. line.



Average freight train running into or out of Amarillo.

The changing skyline of Dallas.

# THE CITIES OF TEXAS

TEXAS is so enormous in size and so connected in the public mind with the open range, that people outside of the state do not always realize that it contains some important cities, as well as many prosperous towns. We have already told you that in 1920 only 324 out of every 1,000 people lived in towns of 2,500 or more, but even so twenty states had a smaller percentage of town dwellers than Texas.

Texans know that the state has some beautiful cities, with magnificent public buildings, imposing business structures, and stately homes. Some of these buildings would adorn cities much larger in population and better known to people outside the state. There are smaller cities which are on the way toward becoming greater. There are many busy towns with substantial business houses and attractive homes, though they can hardly be called cities. There are sleepy towns, the population of which remains stationary, or even decreases. In all there are about five hundred incorporated towns in Texas, and about 2,350 post-offices.

Some of the cities and towns are of respectable age, as age is counted in this country. San Antonio is more than two hundred years old. Goliad and Nacogdoches are also old towns, but they have not grown into cities. Houston, Austin and Dallas are approaching the century mark, though their great growth has been in recent years. Fort Worth is a few years younger. Cities are a new development in Texas. In 1900 there were only two which had more than 40,000 population, and only three others with more than 25,000. Twenty years brought great changes, and since 1920 the growth of many of them has been even more rapid.

To be sure, there are to-day no great cities like New York, Chicago or Philadelphia, but in 1920 there were four each of which had considerably over 100,000 population. These were San Antonio, Dallas, Houston and Fort Worth. All of these are larger now.

There were six others which had more than 25,000 and less than 100,000 when the census was taken. These were, in order of size, El Paso, Galveston, Beaumont, Wichita Falls, Waco and Austin. El Paso has certainly risen into the first class now,

and since 1920 some of the others are known to have grown very rapidly. We shall give the estimates of the present population a little later.

### Cities that are growing very rapidly

Some other cities which were below 25,000 in 1920 are probably above that figure now. In some cases they are near recently opened oil-fields; in others trade of one sort or another has increased enormously, and trade and population usually, though not always, go together.

Amarillo, which had only 15,494 in 1920, claims 50,000 now; Abilene, with 10,274 in 1920, claims over 25,000 now; and Corpus Christi, with almost the same population in 1920, likewise claims to have passed the 25,000 mark. Laredo had 22,710 then, and now, its citizens say, has at least 30,000. Port Arthur, with almost the same population in the census year, now claims to have 35,000 or more. Many Texas cities are growing so rapidly that careful estimates may not be accurate next year.

The census estimates are not quite so large, but they are based upon the growth during the ten years previous, and this is not always a fair test. Sometimes a new industry brings a sudden growth. For example, there are several "oil-towns" in Texas which had only a few hundred or even a few dozen people ten years ago, but now count their population in thousands. In some cases busy towns have sprung up where not a soul was living when oil was struck. In 1926 A. P. Borger owned a ranch of 30,000 acres in Hutchinson County. Oil prospectors leased a tiny area and were successful. Now the ranch is a forest of derricks, and the town of Borger, founded in February, 1926, was estimated to have 25,000 people on its second birthday. It was founded thirty miles from a railroad. Now it has two.

The larger towns are fairly well scattered over the state, though of course more are in the more populous sections. El Paso is the only one of the larger cities in the extreme west. The four other large cities are in the eastern half of the state, and a majority of the second class also. However, parts of West Texas are developing rapidly, and the number of town and city dwellers is bound to increase as time goes on.

The United States Bureau of the Census issues every year estimates of the probable population of the larger cities of the country, but does not estimate the smaller cities. This is unfortunate, for Texas has many small cities which are growing rapidly. The following estimate is for cities having over 30,000 in 1920.

| | | | |
|---|---|---|---|
| Austin | 38,800 | Galveston | 49,500 |
| Beaumont | 54,400 | Houston | 250,000* |
| Dallas | 211,600 | San Antonio | 211,400 |
| El Paso | 113,500 | Waco | 45,700 |
| Fort Worth | 163,600 | Wichita Falls | 60,000* |

* Not given in Federal Census for 1927. Figures taken from a local estimate.

### San Antonio, a modern city showing Spanish and Mexican influence

Our bird's-eye view has shown us that San Antonio is divided into three parts by the placid windings of the tree-fringed San Antonio River, lying for thirteen miles within city limits, and the San Pedro, for ten, aided by the seven-mile Acequia. Bridges (seventeen large ones and nearly seventy smaller modern bridges), arch above the waterways. Possibly there was a settlement here before 1700, but the Presidio of San Antonio de Bexar and the Mission of San Antonio de Valero, commonly called the Alamo, were founded in 1718. The villa, or town, began in 1731, and for over a century was the only place of importance in Texas. Four other missions were founded near by and still stand, more or less well preserved. While San Antonio is a modern city, the Spanish and Mexican influence is still strong.

The gay Mexican population of the early days in San Antonio subsisted on the herds of longhorn cattle that grazed the plains. The infant Republic of Texas incorporated the city in 1837. Fort Sam Houston was established on Government Hill in 1865. The International Fair Ground, three miles south, was chosen, in 1898, as a fitting spot on which to organize the Rough Riders. The United States Army has three flying fields in San Antonio. Kelley Field is the largest in America. There is also an artillery camp, a huge motor-transport camp, and an artillery and rifle range. The whole military establishment is the largest in the nation.

A park system that includes over fifty parks and plazas, of which Brackenridge is the largest, offers drives lined with palms and live oaks hung with Spanish moss. Fine highways lead to the irriga-

# IN PICTURESQUE SAN ANTONIO

Old as San Antonio is it has been influenced by the modern spirit and is growing rapidly in population and wealth. It shows some interesting contrasts between old and new.

The Alamo Plaza showing the Federal Buildings at the end, the tall Medical Arts Building to the right, with the Alamo nesting close by.

This corner of the Main Plaza shows San Fernando Cathedral, built in 1734, and The First National Bank Building, a modern skyscraper. The cathedral is the geographical centre of the city.

Upper picture, Underwood & Underwood, N. Y., other, courtesy San Antonio Chamber of Commerce

tion dam at Medina Lake, and to the beaches of Galveston and Corpus Christi. One should see the flood prevention works, the Federal Building, old San Fernando Cathedral, the market house on Milam Square, the splendid new Auditorium built like a huge amphitheatre, the Witte Museum, Main and Military Plazas and, of course, the Alamo, dear to the Texan heart. It is now a historical museum. The College of the Incarnate Word, Our Lady of the Lake, and St. Mary's Junior College are Catholic institutions. Westmoorland Junior College is Methodist.

The San Antonio Public Service Company has a high-power hydro-electric station on the Guadalupe River, and the city draws its water supply from seventeen cold artesian wells. There is an abundance of Mexican and some Negro labor for the canning and packing plants, and there are factories where trucks and tractors, textiles, leather goods and pottery are made. There are hundreds of other factories.

### DALLAS, A CITY OF BIG BUSINESS AND OF MANY FACTORIES

Dallas, founded in 1841, though not incorporated until thirty years later, is situated in the best agricultural section of the state, and has become the leading wholesale market of the Southwest. One-fifth of all the cotton crop in the United States is grown within a hundred miles of the city, which is the largest inland cotton market in the world. There were, in 1927, according to Chamber of Commerce figures, 675 factories; for Dallas makes nearly half the cotton gins of the world, ranks third in the United States in the distribution of farm implements, and is one of the biggest distributing points in the Southwest for agricultural machinery. It is the most important centre for the manufacture of cottonseed oil and cake. About 150 Dallas firms do considerable business in foreign countries. Situated within seventy miles of the Central Texas oil field, the city is headquarters for a number of large oil companies, and has abundant supply of natural gas and cheap electric power. It is also a livestock market, with slaughter-houses and meat-packing establishments; it has cotton presses, flour and grist mills, and ships quantities of wheat and cotton. The United States Census of Manufactures for 1925 valued the manufactures at 112 million dollars. The new $4,500,000 administration building of the Southwestern Bell Telephone Company rises a symbol of the intimate connection between the skyscrapers and the farms and oil wells that make them possible.

There are also fifty thousand students in this great factory city. The work begun at forty-five or more elementary schools, eighty private schools and six high schools may be continued at Dallas University, Southern Methodist University, Baylor University (Medical Branch) and St. Mary's Junior College. Dallas also counts among its educational assets the influential Dallas Morning News, the Dallas Journal, the Times-Herald and the Dallas Dispatch. Many books are published here.

The city is governed by a mayor and four commissioners, under a charter that provides for the initiative, referendum and recall, and the school board is elected by the people. In December, 1927, Dallas voted in favor of an extended plan of municipal improvement (financed by nearly twenty-four million dollars' worth of bonds). The scheme of public improvements, known as the Ulrickson Plan, included more schools, better parks, an Art Museum, a Municipal Auditorium large enough for important conventions, opening and widening streets, larger sewers, and a system for the drainage of the storm-water that had occasionally flooded the streets. There are now over 260 miles of paved streets, half a dozen public libraries, hotels enough to accommodate thirty thousand people, parks in many of which free motion pictures are given, two hundred churches, and nearly forty theatres, including five for Negroes. The city was named for George M. Dallas, vice-president under Polk.

### FORT WORTH THE GREATEST PIPE-LINE CENTRE

Fort Worth, thirty miles from Dallas, at the junction of two forks of the Trinity River, is another factory city laid out in the Blacklands, the cotton belt. Begun, in 1849, as Camp Worth, a military post in the wilderness, its first traffic was in buffalo hides and skins. Now an enormous cattle and grain market, it has appropriately become the largest meat-packing centre in the Southwest. The Armour and Swift packing plants employ 4,000 men, and many cattle are also shipped from here. It is an important

# DALLAS NOW AND FORTY YEARS AGO

Photograph, McAnnally.

**Main Street, Dallas, as a busy thoroughfare with its towering buildings, and its constant stream of traffic. Forty years ago (1887), as you see below, there were no high buildings, no pavement and little traffic. One could cross from one side to the other without danger then. It is hard to believe that it is the same street.**

cotton market, and handles a large part of the wheat crop of Texas. Considerable flour is exported. It is an important railroad centre with lines to all parts of the country. The freight yards will accommodate 15,000 cars, and there are large railway shops.

The discovery of the Ranger and Burkburnett oil fields opened a vast oil-producing region, and there is a large trade in machinery and supplies for the oil fields. There is natural gas in abundance. There are bituminous coal mines but fifty miles away, and one of the largest electric power plants in the United States is located in Fort Worth. The Federal government established its helium plant here in 1918, to extract this rare gas from the natural gas of the fields nearby.

The change from ranch to farm life has had much to do with the rapid growth of Fort Worth. There are many factories in addition to the meat-packing and flour industries already mentioned. Cement, cotton, boots and shoes, machinery and dozens of other things are made. In the 1925 Census of Manufactures, Fort Worth's production was given as 100 million dollars, making it second among Texas cities. Twenty-six new factories were added in 1926. Labor is well paid, and Fort Worth contains miles and miles of homelike bungalows.

There are good elementary schools, nine high schools, in four of which night classes are held, and one large building is given over to vocational training. Texas Christian University must be mentioned among the things that have made Fort Worth what it is to-day, and also the Southwestern Baptist Theological Seminary and the Texas Women's College. The city is also a publishing centre. Hospital facilities are excellent. City water is supplied from a lake six miles from the city that was made in 1916 by damming the West Fork of the Trinity. The convention halls include the Coliseum, which holds seven thousand people, and the Baptist Auditorium, which accommodates five thousand.

Drawing from Sweet & Knox, On a Mexican Mustang through Texas.

**Sidewheel steamboats made their way up Buffalo Bayou before it became the Ship Canal. Shooting alligators served to while away the time.**

Houston, named, of course, for General Houston, and shaded by huge oak trees draped with Spanish moss, was originally intended (in 1837) to be the state capital, but it was decided to place the capital farther west. It was built on Buffalo Bayou, fifty-four miles inland from the Gulf of Mexico. In 1837, when the first steamer came splashing along from Harrisburg, the channel was choked with snags and an alligator swallowed the ship's cook. As early as the seventies, a few shallow draft side-wheel steamers were seen on the narrow high-banked channel with its drooping shade trees. Between 1860 and 1875 Commodore Charles Morgan used the channel for a line of steamers operating between New Orleans and Clinton, some distance below Houston.

The United States Government later became interested in the possibility of making a port of Houston, and in 1899 began to co-operate with local interests

# FORT WORTH BY DAY AND BY NIGHT

Fort Worth is attractive whether seen from the air or from the ground and the business section is exceptionally well-lighted at night.

The slogan of Fort Worth is "the biggest city of its size in the United States." Certainly the development of the city from a frontier post to an industrial and commercial city has been rapid. As you are told elsewhere it was founded to protect settlers from the Indians. In a sense Dallas and Fort Worth are rivals as they are not far apart and the industries are more or less similar.

Photographs, courtesy Association of Commerce.

in the widening and deepening of the Bayou, until by 1914 a twenty-five foot ship channel had been dredged to a width of two hundred feet where it crosses Galveston Bay. This gave Houston access to deep water as well as a location on the Intracoastal Canal of the inland waterways of the Mississippi system. To accommodate larger vessels, the channel was then deepened to a minimum of thirty feet. The city and county spent other millions in preparing port facilities. Added to this, Houston's rail connections were such that its slogan now became "the port where seventeen railroads meet the sea." Men with capital to invest became interested, and 1925 saw the beginning of an amazing growth.

Courtesy of Chamber of Commerce.

**This glimpse of one of the many parks in Houston shows in the distance the equestrian statue of Sam Houston by Coppini.**

To-day the wharves of Houston are a busy scene, roustabouts laughing as they work, great bales of cotton all but bursting their bonds, fat bags of rice and sugar, oily parcels of cottonseed cake and meal, and mingling with it all, the good smells of coffee, fresh cut lumber and the tang of salt water, and the clangor of steel rails being hoisted to waiting decks. Electric traveling cranes lift entire freight cars with their cargo from wharf to warehouse, and incredibly big electric magnets pick up steel rails as a boy's horseshoe magnet picks up needles. Houston has become the second largest cotton port in the United States (Galveston ranking first).

Pipe lines radiate from the great inland oil port to the producing fields of Texas and even to states as far away as Wyoming. In 1925 Houston exported nearly two million bales of cotton, and stored thirty-five million barrels of oil along the channel. The new industries include not only high density cotton compresses, warehouses and oil refineries, but an ammunition plant, fertilizer works, a chemical works, a molasses factory, a coal bunkering plant, rice mills and a million-bushel public grain elevator, erected in 1926, which has enabled Houston to enter the grain exporting trade. This grain elevator, typical of all that is most modern, would be an interesting place for any boy to visit. It has elevating machinery driven by electric motors and a loader which tilts a carful of grain endwise and sidewise, unloading it in close to eight minutes' time and making it possible to deliver thirty-five thousand bushels per hour to the waiting steamship.

Houston owes her remarkable development largely to three things—to the ship channel, to proximity to the oil, cotton and lumber of central and southern Texas, and to the cheap fuel supply for her factories that can be drawn from nearby oil and natural gas fields. The city has become the headquarters of over forty oil companies. Fifty-two steamship lines reach the ports of the world, and during 1925, nearly ten million tons of cargoes were loaded—as contrasted with but one million for 1920. So efficiently does docking go forward that the cotton-carrying ships can take on twenty thousand bales in two or three days' time, while oil vessels need remain but twenty-four hours in port. Fifteen tank lines

# SOME OF THE TALL BUILDINGS IN FORT WORTH AND HOUSTON

Though there would seem to be a great deal of room in Texas, tall buildings are rising in all the cities. The inset shows the Esperson Building in Houston, the tallest and costliest office building in the South. The others are the Medical Arts, the Petroleum and the Ft. Worth National Bank Building, all in Ft. Worth.

Pictures, courtesy Houston Chamber of Commerce; Ft. Worth Association of Commerce.

Courtesy Southern Pacific and El Paso Gateway Club.
**The small picture shows a street scene in El Paso about 1882; the other a modern residence street.**

handle the cargoes from the refineries en route to their American and European ports. Should a fire start on the water-front, a fire-boat is able by means of its hinged water-tower to direct a stream of water to the decks of vessels or the roofs of wharves.

As in all the larger cities of Texas, there are many parks and country clubs, good libraries and hotels, one of a thousand rooms. The city built an admirable hall for the Democratic National Convention of 1928, and received high praise for the manner in which the crowds were handled. Among Houston's important institutions are the Baptist Hospital, the Methodist Hospital and School of Nursing, the Houston Chronicle and Post Despatch, and the highly endowed Rice Institute, where over a thousand young people reap the benefit of one Texas-made fortune. The Federal Land Bank, established in 1917, serves farmers through 350 local co-operative National Farm Loan Associations.

### EL PASO, WITH ITS POSITION ON THE MEXICAN BORDER

El Paso, lying fringed in cottonwoods on the banks of the Rio Grande, across the bridge from Juarez, Mexico, stands in almost the exact centre of the Great American Desert. There were settlers here very early, but only recently has the city become important. El Paso del Norte (the Pass of the North), or the portion of it that lay on the American side of the Rio Grande, was won from Mexico in 1836. After the conquest of Mexico by Juarez the Mexican El Paso across the bridge began calling itself Cuidad Juarez. The American town called itself Franklin, but in 1858 changed its name to El Paso, and in 1873, what had been, less than a generation before, but a village of adobe shacks, was chartered as a city. A site 3,762 feet above sea level, where the sun shines on an average of 331 days a year, its tuberculosis sanatoria are well patronized by health-seekers. In the clear, dry air many regain their strength, and some grow so devoted to the city that they remain permanently.

The city has many factories, which produced twenty millions in goods in 1925. It makes brick, cement, cotton goods, cottonseed oil, foundry products and various other things. It is an important livestock market, and the packing industry is considerable. The city, however, is free from the dirt and grime so often found in industrial cities.

El Paso is the seat of the School of Mines and Metallurgy of the University of Texas, established in 1914. In 1920 a junior college was added to the public school system, which is excellent. That same year something occurred which greatly increased the population, the completion of Elephant Butte Dam and the fact of El Paso's location at the centre of the Rio Grande reclamation project, which by 1925 had brought 125,000 acres under cultivation. A large part of the population is Mexican. El Paso has a

# IMPORTANT PUBLIC BUILDINGS IN FOUR CITIES

The State Fair is held annually at Dallas and permanent buildings have been constructed. This is the Fine Arts Building.

The City Hall Auditorium at Galveston will hold 5,000 people, and is in frequent use for conventions meeting in the city.

The new Municipal Auditorium at San Antonio is an imposing structure and will seat comfortably 6,500 people.

The Municipal Auditorium at Houston, though in quite a different style, is also a handsome building. It will seat 7,000 people.

Photographs Galveston, courtesy Chamber of Commerce; San Antonio by Summerville; Houston, courtesy Missouri Pacific Lines.

Memorial Park to the Soldiers and Sailors in the World War. Within easy reach of the city are Mt. Franklin, the Carlsbad Caverns, the Sacramento Mountains, towering ten thousand feet above sea level, the Organ Range and the Hueco Mountains. Fort Bliss, on a wide plateau, is the largest cavalry post in the United States.

### AUSTIN, A CENTRE OF GOVERNMENT AND EDUCATION

The site of Austin, at the foot of a range of violet-shadowed hills, was chosen, in 1839, as the capital. The domed state house of Texas pink granite, completed in 1888, was at that time one of the sixteen largest buildings in the world, and is still the largest state capitol in the United States. To pay the builders, Texas gave them three million acres of her public domain, now estimated to be worth sixty million dollars.

While Austin has many factories, and produced nearly five million dollars in goods, in 1925, it is chiefly noted as a centre of government and education. It is the seat of government of the state, and the principal state officials reside here during their terms of office. Many of the important state-supported benevolent institutions are located here. They are described elsewhere. The University of Texas, destined, with its increased income, to be one of the greatest state universities, is here, and also several denominational institutions. They are Austin Presbyterian Theological Seminary, St. Edward's University, and two institutions for Negroes, Samuel Huston College, and Tillotson Junior College.

The city is beautifully situated and is a delightful place of residence. An abundant water supply is drawn from the Colorado River, and the railroad facilities are good. The city lies between the Edwards Plateau to the west and a highly-developed agricultural section to the east.

### WACO, HOME OF THE TEXAS COTTON PALACE

Waco, where the Texas Cotton Palace holds annual expositions, is in the heart of the Blacklands, and is also a jobbing and manufacturing centre served by twelve railroads. The storage warehouses are continually engulfing and disgorging lumber, cotton, implements, groceries, dry goods and automobile accessories. The many factories produced goods worth nearly twelve million dollars, in 1925. Waco came into being in the gold days of Forty-nine when Captain "Shap" Ross established a ferry across the Brazos for the prairie schooners en route to California. As far back as 1837 the Rangers had tried to set up a log fort at Waco Springs, where the Comanches had lately wiped out the fortified village of the Waco Indians. At that time massacres of the white settlers occurred constantly, but a treaty of peace was signed in 1843. Two years later Neil McLennan erected the first homestead in the county which now bears his name. In 1849 the grant surrounding Waco Springs was cut into plots and the site was named Waco village. Within two years there was a log church and a Masonic lodge. In 1886, Baylor University, now the leading Baptist educational institution of the South, was moved from Independence to Waco, and consolidated with Waco University. After the Civil War a suspension bridge was built to replace Ross's ferry, and with the coming of the railroads Waco began to grow. A lumber yard to furnish ties for the Missouri Pacific Railroad was opened in 1875, and the descendants of that first lumberman have given Cameron Park, a large playground along the river. The Rich Landing Field and a locomotive repair shop help to lend importance to Waco. The name possibly comes from the Spanish *hueco,* meaning tanks.

### TWO IMPORTANT GULF PORTS, THE OLDEST AND THE NEWEST

Along the coast from Brownsville to Galveston lie landlocked bays and inlets, of which one of the most important is Corpus Christi (Body of Christ). Twenty years ago it was a sleepy town with a fine bathing beach, lying in a graceful crescent along the west shore of the Bay, where palms lift drooping fronds against the sky. Until about 1880, when the railroad was built across the Mexican border to Galveston, Corpus Christi had been important as a seaport. Temporarily it lost its advantage in that regard, but is now regaining it with interest, for the Federal government, co-operating with Corpus Christi and her port district, has dredged a channel twenty-five feet deep through the North Peninsula, and erected a strong breakwater outside that line. For the handling of grain from the Northwest, huge terminal elevators are

Brackenridge Park, San Antonio, is one of the glories of the city, and one of the most attractive bits in it is the Japanese Sunken Garden pictured here. This shows the peculiar talent of the Japanese in artistic gardening and is one of the sights of the city.

Cameron Park in Waco, the gift of a pioneer family, contains a variety of surface. The part along the Bosque River shown in the larger picture is rather broken, while the inset shows a more cultivated section.

Photographs, courtesy San Antonio and Waco Chambers of Commerce.

being erected, while the Texas Farm Bureau Cotton Association has made the port a concentration point for cotton grown by its members in thirty-eight South Texas counties. There are now two high-density cotton compresses and a bonded warehouse. Geologists have found that a field of natural gas extends under Nueces Bay, and only a few miles from the port is a huge deposit of silica sand suited for making high grade glass. A new pipe-line from the Upton County oil field gives West Texas oil interests a direct outlet to the sea through the port of Corpus Christi. The port was opened in 1926 and in that first year handled a tonnage of 2,500,000. A beautiful bathing beach, completed in 1925, attracts tourists, who are coming in increasing numbers.

### Romantic Story of Galveston, the World's Largest Cotton Port

Galveston, once the "treasure island" of Lafitte, the Pirate of the Gulf, is now the world's largest cotton export port, the world's largest sulphur export port, and the second export port in the United States, exceeded only by New York.

The island was named by Spanish explorers for the dashing Count Bernardo de Galvez, Governor of Louisiana, and Viceroy of Mexico. Lafitte discovered the spot and established a rollicking pirate colony, but on being evicted in 1820 by the Federal government he set fire to the town. After the beginning of Anglo-American civilization in Texas, the bay became the gateway which its natural anchorage for ships entitled it to be. In 1836, Colonel Michael B. Menard purchased the site from the Republic of Texas for $50,000. There were at that time but nine and a half feet of water over the inner bar, and sailing vessels had hairbreadth escapes in crossing. It was nevertheless visited by barks and steamships flying the flags of many nations.

Galveston played an important part in the era of colonization that followed, as immigrants from the older states often came by steamer from New Orleans, while those from Europe disembarked at Galveston. As far back as 1889, Congress decided to create an outlet for Texas cotton, and has since spent $18,000,000 in developing the port. To-day great steamships can come up through a thirty-five foot channel nearly half a mile wide at the outer bar and sail into port between the island and the mainland in thirty feet of water; and though few railroad connections are possible, ships can reach open water in less than forty minutes. Moreover, one has but to walk three blocks north from the heart of the retail district to see, perhaps, a Dutch freighter taking on Texas wheat, or a Japanese vessel loading cotton.

In 1900 a tropic hurricane rolled a tidal wave over the city destroying 6,000 lives and millions of dollars in property. Out of that disaster sprang the commission form of government which has since spread over the country. The new charter provided for a commission of five men selected by popular vote. They set to work to rebuild the city. First they had all houses set on stilts nineteen feet in the air. Sidewalks were built on scaffolds, street cars were run on elevated tracks. A system of ditches laid out on the plan of the backbone of a fish was dug, and great machines worked night and day pumping sand over the land, while the water ran back into the bay. Of course buildings erected on such "made" land cannot be tall, but Spanish architecture and shell-paved residence streets lined with palms and oleanders have a charm that is unique. Added to this is the thirty-mile beach of hard sand that remained, when a seawall seventeen feet high and seven and a half miles long was built. A two-mile causeway to the mainland has been added. The boardwalk is comparable to that at Atlantic City.

The Galveston Wharf Company now operates fifty miles of railroad trackage, thirty piers and fifteen wharves and has berthing space for a hundred ocean-going steamships. An annual average of four thousand vessels, representing over seventy-five steamship lines, may be seen. In 1926 nearly two million tons (1,863,268) of exports were carried out on 677 vessels. Her wharves receive raw sugar, coffee, bananas, jute bagging, iron and steel pipe and structural steel, and great rolls of newsprint paper, while they load a yearly average of 2,000,000 bales of cotton and 1,500,000 tons of sulphur. In actual value, Galveston exports nearly twenty-five times as much as she imports. The factories make brooms, cotton yarns, preserves, iron and steel, flour and many other things ($13,356,288, in 1925). Six of the fifteen or more high density compresses have a capacity of six thousand

# THE CITY AND PORT OF GALVESTON

This picture shows a part of the downtown section of Galveston with a glimpse of the harbor in the background. Though Galveston has not the tall buildings of which other Texas cities boast, it has many substantial business structures and attractive homes. Galveston is a port, and also a pleasure resort.

Here is a part of the harbor, where ships leave for 126 foreign ports. There are thirty-two large piers which accommodate 100 ocean-going vessels at one time. The ship channel is 32 feet deep and can accommodate all except the very largest ships. Galveston is the greatest cotton and the greatest sulphur port.

Pictures, courtesy Galveston Chamber of Commerce.

© Cecil Thomson Studios.

**Many of the tall commercial buildings in Houston reach up toward the clouds.**

bales a day, and the rice-cleaning establishments are large. The Mallory Line terminal and the Southern Pacific terminal own their own port facilities.

As in all seaports, the floating population is large and tourists find the surf bathing so mild that they can spend whole days in their bathing suits. There is wonderful yachting and fishing. People in small boats try for tarpon as fierce as sharks. Fishermen bring in thousands of pounds of fish from Gulf waters, and there is duck shooting along the bayous. The Hotel Galvez fronts directly on the seawall, and Mill Park is attractively built in the Spanish style. A year after the flood, the medical department of the University of Texas was established at Galveston. The hospital facilities are excellent.

Wichita Falls, up among the wheat fields near the border of Oklahoma, had a population, in 1900, of but 2,480. Thanks first to the intensive cultivation of small farms, but far more to the oil boom of North Texas, it had grown, in 1920, to over 40,000, showing the greatest percentage of growth in Texas. As Wichita County is a petroleum-producing field of increasing importance, and there are others not far away, its later growth has been due not alone to the nearness of oil, but to the manufacturing and distribution of oil well supplies and the presence of at least ten refineries in the immediate vicinity. There are also flour mills, and manufactories of motor trucks, glass, bricks and tiles, and other things. The products were worth $26,583,000, in 1925. A gigantic reservoir on the Wichita

**The Esperson Building (with the dome) is a sort of monument to a prominent citizen now dead.**

River furnishes water both for domestic use and for irrigation. The public schools are good, and the city has established a junior college. Wichita was the name of a tribe of Indians.

A generation ago Beaumont was a sawmill town in East Texas. Now huge derricks and great oil tanks are spread over the landscape, for, in 1901, the great Lucas well at Spindletop, just beyond town limits, came in, and other fields were opened not far away. The city also owes its recent development to the thirty-foot channel from the Gulf, via the Neches River, and the canal through Sabine Pass, which was completed in 1926. The development of Spindletop and eleven other oil fields in the Beaumont territory made it not only an oil port, but a centre for the manufacture of machinery and other supplies. The Intracoastal Canal really came into service with the completion of the pipe-lines to the oil territory of Texas, Louisiana, Oklahoma, Arkansas and Kansas. There were, by 1926, seven oil refineries on the channel, and $15,000,000 more was invested in 1927 in refineries. In addition this section is just beginning to benefit by the $2,000,000 drainage project, whereby 500,000 acres of farm land have been reclaimed for the raising of fruit and vegetables. There are also 250,000 acres under ditch for rice culture, and Beaumont is the leading rice milling centre of the state. As evidences of Beaumont's present prosperity, several tall office buildings have been erected, together with a million-dollar theatre and a cotton compress warehouse. Several million dollars

# THE LAND OF PALM AND OLEANDER

In Southeast Texas the climate is sub-tropical, and palms and oleanders flourish. Many of the streets are lined with them. The inset shows a Galveston street where, it is said, twenty-eight species and varieties of oleander may be found growing. The larger picture is a street in San Benito.

The palms which shade the streets of McAllen, Hidalgo County, are a different species from those shown above. The town itself is hardly twenty-five years old, but the hotel is distinctly unusual.

Photographs, courtesy Chambers of Commerce, Galveston and San Benito; Missouri Pacific R.R.

# THE GROWTH OF WESTERN CITIES

Pine Street, Abilene, in 1884, three years after the town was founded. It was only a "cow-town" then, and as you see saloons were convenient when the cowboys came in from the range.

The same street as it appeared forty-three years later, when both saloon and cowboy had been replaced by business buildings and motor cars. Pictures, courtesy J. C. Watson.

Amarillo is about the same age as Abilene, and likewise has grown rapidly. Ranching, farming, natural gas and oil have all had a part in the development of the city which is also the county seat of Potter County. Picture, courtesy Board of City Development.

have recently been spent upon street and park development. The town, settled in 1828 among the pines and cypresses, bears a French name that means "beautiful hill."

An electric railway runs to Port Arthur at the mouth of Sabine Bay. Once a flooded district, the city now has good drainage, and was founded with a view of its port facilities. It has some of the largest oil refineries in the world, and exports quantities of petroleum and refined oil products, as well as considerable lumber from the pine belt, rice and cotton. It is claimed that the public school system is one of the best in the state.

Laredo, an old town just across the Mexican border from Nuevo Laredo on the high bank of the Rio Grande, is connected with Mexico by the International Bridge, and its position makes it a port of entry for Mexican immigrants, as well as Mexican trade. Sunday evenings the bells of the churches of two nations can be heard sounding their chimes. Laredo is on the International-Great Northern, Texas, Mexican and the Rio Grande and Eagle Pass railroads, and is the United States terminal of the Meridian Highway from Winnipeg. Good highways and bus lines connect the town with Corpus Christi and San Antonio. One of the largest fields of cannel coal in the country lies just twenty-eight miles northwest of Laredo. The city has been drawing upon the local supply of natural gas since 1921, and in 1926, the huge well of the Cin-Tex Petroleum Corporation added impetus to the oil rush that began in 1921 in the Laredo district. It is the shipping point for a rich irrigated district. There is considerable manufacturing. The Laredo Airdrome is a landing field of the Air Corps. A local estimate gives the population as 30,000.

### THE RAPID GROWTH OF TOWNS AND CITIES IN THE WEST

As for Abilene, in the North, it seems that the cattlemen who followed the old Chisholm Trail from this point found their best market in Abilene, Kansas, and named this town in honor of the other. In 1900 it was a country town of 3,411 people in a ranching county. Now it is a thriving city in a rich agricultural region, and since 1910 the growth has been phenomenal. About forty oil companies have offices here, and there is considerable manufacturing. It is also one of the chief wholesale centres in West Texas. It is supplied with natural gas, and draws its water supply from Lake Abilene. It has good railway facilities, and the radiating highways are excellent. The city is the seat of Simmons University, of Abilene Christian College and of McMurry College, and has a good public school system.

Amarillo, Spanish for "yellow soil," was organized in 1887 when the Fort Worth and Denver Railroad was constructed to that point. Till 1900 it was only a cow town. Lying in almost the exact centre of the Texas Panhandle, it began to grow as the range was cut up into wheat farms. Later cotton was planted with profit. The census of 1920 credited it with around 15,494 population. When the big oil strikes were made in this region, it shared the boom. In addition, across the Panhandle runs a strip no wider than twelve miles which may prove to be the world's largest gas field, and several industries have been drawn here by the cheap fuel supply. The wholesale trade in farming machinery and oil field supplies is particularly extensive. As a consequence of these favorable features, Amarillo has a population which was said to be 25,000 in 1925 and may be double that figure now. In 1928 the United States began a new helium plant six miles from the city.

It is difficult to describe the towns of West Texas. Since the discovery of oil in the region new towns spring up in a night. We have already spoken of Borger, but there are others. McCamey, Upton County, began in March, 1926, with a box-car for a railroad station. There were probably more than ten thousand people there before the end of 1927. The whole county had only 253 people in 1920. Crane County had only 37 people in 1920, and before the end of 1927, Crane City had over 1,500, and was growing every day. Perhaps before this is printed, there will be other discoveries followed by new towns.

Besides these oil towns, there are dozens of small cities in Texas which are not doubling their population every year, but, nevertheless, are showing rapid and healthy growth. Since it was necessary to stop somewhere, we have given our space to those cities above 25,000 population. It is certain that the new census, in 1930, will show additions to the list.

El Paso High School with Stadium in front.

# PUBLIC EDUCATION IN TEXAS

## I. EDUCATION UNDER SPANISH RULE

SPAIN, learning of the effort at colonization by France, began, in 1690, the establishment of missions in Texas, and during the succeeding century erected about twenty-five missions, extending from San Antonio on the southwest to Nacogdoches on the northeast.

The purposes of these missions were, first, to maintain the Spanish claim to Texas by providing posts where small garrisons of soldiers could be placed, and Indian military forces might be trained to be used against possible encroachments upon Texas lands by French settlers in Louisiana; second, to furnish places of entertainment for man and beast when Spanish officials might visit the Texas possessions; and, third, to give an opportunity to convert the Indians to the Christian religion.

A mission was usually surrounded by a stone wall or a high palisade of logs. Within were a church, living quarters for the priests, and, usually, for a few soldiers, and rows of huts for the Indians. Here also were storehouses for grain and other produce. These missions were the first schools established within the boundaries of Texas. The priests gathered within the mission walls as many of the Indians as they could coax or force to come under their rule, and taught to the adults agricultural and domestic arts, religious songs, and such simple religious doctrines as were within their comprehension. To many of the Indian children they gave regular instruction in elementary schools.

But the Texas Indians were of a lower type of intelligence and of a more untamable nature than were the tribes of Mexico and of the western part of our own country. They did not take kindly to the laborious life and the strict discipline of the missions, and after about a century of intermittent efforts, the Spanish abandoned their attempts to train the Texas savages in mission communities.

The missions in East Texas, which were situated at or near the present-day towns of Nacogdoches and San Augustine, were built of logs, and, after being abandoned, soon fell into decay. But those in or near San Antonio were constructed of stone, and some of the buildings are well preserved at the present time.

During the Spanish regime, the only settlements of importance in Texas were San Antonio, Goliad and Nacogdoches. Records in the Bexar archives at the University of Texas show that, during this period, various parish schools were at times conducted, and that in the early part of the nineteenth century, an attempt was made to found at San Antonio a public school in which five poor children were annually to receive free instruction.

## II. EDUCATION UNDER MEXICAN RULE IN TEXAS

In 1821 Spanish rule over Mexico and Texas was ended by the establishment of the republic of Mexico. Texas, under the new government, was joined with Coahuila, and became a part of one of the states of Mexico, called the State of Coahuila and Texas.

Early laws passed by the Congress of the State of Coahuila and Texas directed the land commissioner, in laying off new towns, to mark out a block for a school and other buildings for public instruction, and provided for a system of schools on the Lancastrian plan. This was a scheme by which the school master taught each lesson to a number of monitors, each of whom in turn instructed a group of children in what he himself had just learned. In the first quarter of the nineteenth century, this was a popular plan of instruction which spread even to the wilds of Texas, but was never carried into effect.

### Schools in San Antonio, Nacogdoches, and other settlements

In 1828 a public free primary school, which seems to have existed six or seven years, was established at San Antonio In 1830 a successful school was founded at Nacogdoches, and others were opened in many of the American settlements which were made in Texas as a result of the efforts of Stephen F. Austin and other *empresarios*. A leader like Austin, who secured a grant of land for a colony and brought in families intending to make a permanent home in the republic of Mexico was called an empresario. Some of the other empresarios who took a part in settling Texas with colonists from the United States were David G. Burnet, Hayden Edwards, Green DeWitt, Robert Leftwich, Benjamin R. Milam, Frost Thorn and Lorenzo de Zavalla. Many of the colonists were persons of education and culture, who, immediately after becoming settled in their new homes, began to make plans for the education of their children.

### Types of schools during Mexican rule

There were three main types of schools conducted in Texas during the fifteen years in which its territory was ruled by Mexico. These were the parochial school, the village school, and the neighborhood school. The parochial school was taught by the priest of a village or small town, or under his supervision, and was supported chiefly by fees paid by parents. A law passed by the Congress of the State of Coahuila and Texas in 1833, permitted any town to use for the support of its schools one-half of all town funds up to the amount of $2,000 per year. Town schools were placed under the control of a school board consisting of the *alcalde,* or police chief, the parish priest, and one other member. Neighborhood schools were established by groups of parents living near together who united in employing a teacher to instruct their children. These were usually called subscription schools because each parent placed his name upon the list of those combining for this purpose, and set opposite his signature the amount which he would pay toward the support of the school. It was common in all three types of schools for a few selected children of the poor to be instructed free of charge.

### Resentment at lack of government aid for schools

The making of grants of land for the founding of primary schools and academies was at this time not uncommon in the states of the Union. In Texas, the town of Nacogdoches received from the government, during this period, a donation of four leagues of land for school endowment, some of which school property is still owned by the city of Nacogdoches. Much dissatisfaction was felt by the Americans that the Congress of Coahuila and Texas did not make generous donations of school lands to all of the Texas colonies.

Among noted men teachers of this period were Thomas J. Pilgrim, Isaac M. Pennington, Josiah Wilbarger, D. B. Edwards, T. J. Garner and Gail Borden. A few women conducted schools for girls. Among these were Miss Trask, a Boston

missionary, Miss L. A. McHenry, and her sister, Mrs. Ayres.

## III. EDUCATION UNDER THE REPUBLIC OF TEXAS

On March 2, 1836, the Texans declared their independence of Mexico, and after a brief war ending with the Battle of San Jacinto, April 21 of the same year, established a separate government under the name of the Republic of Texas.

It has not been so many years since this was as good as the average. The present Rocky Point (Rains County) school is shown at the right.

It was during the period of the Republic of Texas (1836–45) that the foundation of the Texas public schools was begun, though a system of free schools was not established during this time. Texas was a vast domain with but few towns, and with only a small proportion of its area of rich farm lands cleared for tillage. Indian depredations were common and disastrous. Roads were to be found only in the more thickly settled areas, and good roads were unusual in any part of the republic. Most of the Texas pioneers, though rich in energy and courage, were poor in worldly goods, and the chief wealth which the new government could devote to education was the lands which the valor of its sons had won from Mexico.

### THE SCHOOL LAWS OF 1839 AND 1840

Three years after the formation of the Republic of Texas, its congress, in the school law of 1839, began the policy of granting lands for public school purposes, a course which has resulted in giving Texas the largest state public school fund of any state of the Union. By this law there were set apart for each county of the republic, three leagues of land to be used for establishing a primary school or academy in the county; and the next year an additional league for each county was granted, with the provision that this league might be sold and the proceeds be devoted, one-half to the equipment of an academy and the remaining half to the common schools. The chief justice of each county and two associate justices were made county school commissioners, and vested with authority to divide the county into school districts, to examine teachers, and to inspect the schools. The passage of the school laws of 1839 and 1840 was due largely to the efforts of President Mirabeau B. Lamar, now regarded as the father of Texas public schools.

Land was so plentiful and opportunities to sell it at a fair price, or to lease it, were so rare, that in most of the counties the school lands were not surveyed until long after these grants were made. There was a general feeling that the school lands were an endowment to be used for future generations, and that they should not be sold until the lands should increase in value. Neighborhood schools began to flourish in most of the settlements, and several academies and colleges were chartered. Usually these had an elementary department to which neighborhood children were admitted.

## IV. EDUCATION UNDER THE STATE FROM 1845, TO THE RECONSTRUCTION PERIOD

In 1845 Texas was annexed to the United States. The annexation act, very fortunately for the state, stipulated that Texas, instead of ceding its public domain to the United States, should retain the

title to these lands. Moreover, the state received, in return for giving up certain territory to which it laid claim, ten million dollars in United States bonds. These were placed in the state treasury, and eventually most of them were used in paying the debts of Texas. In 1848 an act was passed setting aside annually for the permanent school fund one-tenth of all the revenues of the state. It was hoped that the annual sums added to this fund would in time produce an income which would give substantial aid in supporting an efficient school system. But this expectation was not realized, and in 1854, owing largely to the recommendations of Governor P. H. Bell in 1851, and Governor E. M. Pease in 1853, there was passed the famous School Law of 1854. This law appropriated to the permanent school fund $2,000,000 of the United States bonds remaining in the state treasury, and provided a plan for carrying on public schools.

### IMPORTANT PROVISIONS OF THE LAW OF 1854

This statute was the first Texas law creating a hierarchy of school officers from the state to the district. The state treasurer was made ex-officio State Superintendent of Common Schools and charged with keeping school records, distributing state school moneys to the counties, and reporting school statistics to the legislature. The chief justice and the county commissioners of each county were constituted a board of county school commissioners upon whom devolved the duties of dividing the county into school districts, ordering and managing elections for district trustees, and making to the State Superintendent statistical and financial reports of county schools. Three school trustees for each district were to be chosen by the qualified voters of the district, and to these trustees were committed the government of the district school and the handling of the school funds. The state apportionment of school money for each district was to be used by the trustees in part payment of the teacher's salary, and these officers were charged with collecting the remainder from the school patrons of the district.

### THE SCHOOL LAW OF 1856 MAKES CHANGES

While school districts were established in some counties, many parents did not take kindly to the district system, and, on recommendation of the ex-officio State Superintendent, James H. Raymond, the law was modified in 1856 so as to permit the continuation of neighborhood schools as formerly. The tuition of children of the poor was paid in full by the county judge, and the remainder of the school money of the county was apportioned among school patrons able to pay part of their children's tuition. The amount of state money paid to each was to be in proportion to the number of children whom he sent to school. Though the district system was continued in some counties, this new plan was found to be a simple and satisfactory way of using the state money to pay part of the tuition of pupils who were not paupers.

The State Treasurer and ex-officio State Superintendent of Common Schools soon began, in his reports to the Governor and the Legislature, to point out the need of creating the office of State Superintendent of Schools, to be filled by a man trained for school work, instead of by an ex-officio superintendent.

### DETERIORATION OF SCHOOLS DURING THE CIVIL WAR

During the short period between the passage of the school law of 1854 and the outbreak of the Civil War, little was accomplished toward the establishment in Texas of a system of free public schools. During that great conflict, many of the teachers, who at this time were chiefly men, joined the army, and the women were engaged in managing the farms, caring for their households, and producing supplies for the Confederate army. Many schools were closed during the period of the war.

### IMPROVEMENTS WHICH FOLLOWED THE CIVIL WAR

After peace was declared, Texas adopted a new constitution in 1866. It was provided that all funds, lands, and other property previously set apart for the support and maintenance of public schools should remain as a perpetual public school fund for the education of the whole population of the state. It was further decreed that for each section of land granted to railroads, an alternate section should be set apart for the permanent school fund of the state. The counties were also secured in their rights to the income of the lands previously donated to them for school purposes. Another provision authorized the Governor to appoint

a State Superintendent of Public Instruction. There was also created a State Board of Education composed of officials, who became members of the board by virtue of holding a specified office. This first State Board of Education was composed of the Governor, the State Comptroller, and the State Superintendent of Public Instruction, and to it was committed the general control of the permanent school fund and of the common schools, under such regulations as the legislature might thereafter prescribe.

### Appointment of a State Superintendent of Public Instruction

In the elections of June, 1866, J. W. Throckmorton was elected Governor of Texas. Although the legislature had not created the office of State Superintendent of Public Instruction, Governor Throckmorton, under the authority conferred by the Constitution of 1866, appointed to that position Mr. Pryor Lea, the first State Superintendent of Public Instruction of Texas. In this appointment we have the beginning of a State Department of Education in Texas.

## V. EDUCATION UNDER RECONSTRUCTION RULE

In 1867, Congress placed the South under military rule. General Philip Sheridan was given charge of Texas and Louisiana, and, in July, 1867, he removed Governor Throckmorton from office and appointed in his place, E. M. Pease, who had formerly served the state as governor (1853–57). Mr. Lea, was forced to give up his position, and, on August 27, 1867, Edwin M. Wheelock was appointed to the position of State Superintendent of Public Instruction. General Sheridan and his subordinates removed from office many of the state and county officials, and usually their places were filled by the appointment of Northerners, commonly called "carpet-baggers" and Southern men who had sided with the North, who were popularly termed "scalawags." The state was required to make a new constitution giving the Negroes the right to vote. Most of the Southern white men were disfranchised, and Negroes and Northerners were the chief voters who selected delegates to the convention which framed the new constitution, now commonly called the "Radical Constitution of 1869."

In November, 1869, Edmund J. Davis was elected Governor, taking office in January, 1870. There were subsequently passed what were called the "radical" school laws of 1870 and 1871. By the first of these, the office of State Superintendent of Public Instruction was, for the first time in Texas, created by statutory law, and that officer was given power to make rules and regulations for the guidance of all district and county school boards, and was granted other authority objectionable to a people who had hitherto managed their own schools. In May, 1871, Governor Davis removed Mr. Wheelock from office and appointed in his stead Colonel Jacob de Gress.

Nacogdoches University is extinct, but this old building is in use as a high school.

### Texas schools under Colonel De Gress

De Gress was an ex-army officer who had never taught school, and undertook to administer the schools of Texas according to military methods. Shortly after his appointment, there was passed the obnoxious school law of 1871, which gave to the State Superintendent the most arbitrary powers which this office has ever been authorized to exercise. The State Superintendent was permitted to appoint, subject to approval by the Governor, one school supervisor for each judicial district of the state, and all teachers were examined and appointed by him or by his district supervisors.

Any teacher might be required to come to Austin to appear before the State Superintendent. Friends of the officials were appointed as teachers and were paid extravagant salaries. The State Board of Education centred all authority in the State Superintendent, who prescribed the course of study and the text books. At a time when the South was financially prostrate from the long drain of the Civil War, the people were forced to pay heavy local taxes for the erection of school houses. The law also provided for compulsory school attendance, which was at this time required by the laws of only two states in the Union—Massachusetts and Vermont. De Gress appointed one school board for each county, and the lavish salaries paid to his army of supervisors, school inspectors, and teachers at a time of general impoverishment in the state, were considered a part of the spoils of the "carpet-bagger" regime.

### Reaction against arbitrary methods develops

In September, 1871, there was held in the city of Austin a gathering called the "Tax-payers' Convention." This was in reality a meeting held to express indignation over the school tax of one per cent authorized by the law of 1871; this tax was, a number of years later, declared illegal by the courts.

In 1873 the school law was modified so as to change somewhat the conditions which the people considered outrageous. Provision was made for county boards of school directors, and many of the powers exercised by the State Superintendent were transferred to the president of the county board, who was made an ex-officio county superintendent. These changes gave, to some degree, a return of local control of schools.

### The end of the reconstruction regime

Though Texas was re-admitted to the Union in March, 1870, Governor Davis had been elected in 1869 to hold office four years. In 1873 Richard Coke was elected Governor, selected largely by the white voters who now were again enfranchised. Davis refused to yield the office of governor to Coke, declaring that the latter had been illegally elected; but, as he was not supported by President Grant in this contention, he relinquished his place. With the passing of Davis went also his appointee, De Gress, and the Reconstruction regime in Texas was at an end.

## VI. THE STATE DEPARTMENT OF EDUCATION

Such was the feeling that had been aroused by the arbitrary methods of Superintendent De Gress, that no provision was made in the constitution framed in 1875 for the selection of a State Superintendent of Public Instruction. This constitution, adopted in 1876, did, however, provide for a State Board of Education, consisting of the Governor, the Secretary of State, and the Comptroller. A new school law passed in 1876 authorized the Board of Education to appoint a secretary, and this officer acted as head of the State Department of Education and performed duties delegated to him by authority of the Board of Education. These were such duties as were in most states at this time performed by a State Superintendent of Common Schools. For about eight years the office of Secretary of the Board of Education was filled by O. N. Hollingsworth, who served until May, 1884, when he was succeeded by Secretary B. M. Baker.

### Re-establishment of the office of state superintendent

While the constitution does not specifically mention the office of Superintendent of Public Instruction, neither does it forbid the creation of such a position. The need of a state school officer with power to administer the school laws and to act as a leader of school affairs in the state soon made itself felt, and, in 1884, the school law was re-written, and the position of State Superintendent of Schools was re-established by statutory law, Secretary Baker becoming State Superintendent of Public Instruction.

### The state board of education and the state superintendent

State school officials in Texas have little direct power in the control of the schools. The State Board of Education is, ostensibly, at the head of the public school system, but the powers of this board are limited chiefly to the fixing of the state per capita apportionment, the investment of the state permanent school fund, and general supervision over the expenditure of the rural aid fund, the text book fund, and the Federal and state

vocational funds. This board has no direct authority over the State Superintendent, does not select that officer, and does not determine his salary.

The State Superintendent of Public Instruction, who is also Secretary of the Board of Education, is elected by popular vote, has a two-year term of office, and is paid a salary of $4,000 per year, which compensation is fixed by law. He is charged with the administration of the school laws and the general superintendency of the public schools of the state. It is his duty to secure reports from all school officers, to compile school statistics and make reports to the Governor and the Legislature, and to hear and determine appeals from subordinate school officers. He is authorized to issue instructions and rulings binding upon all subordinate school officers in the state.

The actual work of apportioning the school funds of various types, of administering the purchase of text books and of the classification of schools and colleges in the state is performed by the State Department of Education. All employes in the State Department of Education are appointed by the State Superintendent. The State Department of Education has grown from two employes authorized in 1866, to sixty-four in 1928, and consists of the following nine departments or divisions: the divisions of administration, of high-school supervision, of rural schools, of vocational education, of statistics, of audits and accounts, of text book administration, of correspondence and supplies, and the state board of examiners.

The Central High School, Ft. Worth, is an imposing structure.

### LIST OF STATE SUPERINTENDENTS SINCE 1884

In addition to those previously mentioned, the following have served Texas as State Superintendents: B. M. Baker, 1885–87; O. H. Cooper, 1887–90; H. C. Pritchett, 1890–91; J. M. Carlisle, 1891–99; J. S. Kendall, 1899–1901; Arthur Lefevre, 1901–05; R. B. Cousins, 1905–10; F. M. Bralley, 1910–13; W. F. Doughty, 1913–19; Annie Webb Blanton, 1919–23; S. M. N. Marrs, 1923, to the present.

## VII. DIVISIONS OF THE STATE DEPARTMENT OF EDUCATION

Each division of the State Department of Education is managed by its respective head, under the general direction of the State Superintendent of Public Instruction. Three Assistant State Superintendents aid the State Superintendent in the general duties of the office. These assist in answering correspondence, directing the work of division heads, seeing the many visitors, who come for consultations on school matters, preparing bulletins and articles for newspapers, and making public addresses. The First Assistant State Superintendent has general charge of the details of work of the Department, and in the absence of the State Superintendent, acts as his representative.

### THE HIGH SCHOOL DIVISION—POWERS AND DUTIES

When the University of Texas was opened in 1883, it soon began the plan of visiting any high school that might request affiliation, approving those found

to be doing satisfactory work, and admitting without examination graduates of approved high schools. As other state colleges were established, many voluntarily accepted the University's list of affiliated schools. In time, however, there developed a feeling that the classification and affiliation of high schools should be performed by some central agency. In 1911 authority was granted to the State Superintendent to classify schools, and this law was further strengthened in 1917. Between 1917 and 1920 an agreement was reached whereby the regulations for the classification of schools should be made by a committee representing both the public schools and the colleges, both independent and state controlled, and these regulations should be administered by the High School Division of the State Department of Education. By this plan, pupils from approved high schools are admitted without examination to any classified college of the state, whether publicly or privately supported. In addition, the State Department of Education holds annually each spring a series of examinations for pupils of high schools not affiliated. The papers of pupils taking these examinations are graded by the division, and any student passing them may, at any time within five years, be admitted without examination to any classified college in the state. The division also prepares high school courses of study and high school bulletins.

The Senior High School in Austin is an enormous building as these views taken from the ground and the air, plainly show. Austin takes pride in its schools.

### THE RURAL SCHOOL DIVISION—POWERS AND DUTIES

This division is charged with the apportionment of special funds for aid to rural schools, and the upbuilding and fostering of rural education. Since 1915 Texas has been making special appropriations to rural schools on conditions intended to stimulate them to self-improvement. This plan was inaugurated by Governor James E. Ferguson, and $500,000 per year was appropriated for the years 1916 and 1917. The schools receiving such aid were required to meet certain standards as to school buildings and grounds, as to sanitary arrangements, as to the qualifications of teachers, as to school attendance, and as to the rate of local tax.

The rural aid appropriations were doubled for the next two years, and in 1919 Governor William P. Hobby led in the movement to increase the special appropriations for rural schools to $2,000,000 per year. This amount was appropriated for each of the years 1920 and 1921. Since 1921, the annual special appropriations for aid of rural schools have varied from $1,000,000 to $2,000,000 per year.

The Rural Supervisors of this division advise and assist rural teachers and county superintendents, inspect and report on the care of text books and the observance of school laws, recommend suitable equipment for country schools, prepare bulletins and plans for rural

# RURAL SCHOOLS BOTH LARGE AND SMALL

Willow Springs School, Fayette County.

A school in Colorado County.

Here are some typical rural schools. The inset is a Limestone County school, while the lower left is the Martinsville School, Nacogdoches County. The lower right is the Smithland School, Marion County. While there are still many one-teacher schools, they are becoming fewer.

school houses, and aid in school rallies and other gatherings held for the advancement of rural education.

In the Rural School Division are two special supervisors who devote their time to the improvement of Negro schools. The salaries and expenses of these officers are paid by the General Education Board of New York, but they are selected by the State Superintendent, and their work is under his direction. They receive applications for aid of Negro schools which request assistance from the Slater, the Rosenwald, and the Jeanes funds, and from funds given by other philanthropists interested in Negro education, pass upon the merits of the schools, and assign to them the sums granted to Texas from such funds. Perhaps their most important work is to stimulate Negroes to help themselves, and to arouse pride in their own efforts toward improvement in schools for their race.

THE DIVISION OF VOCATIONAL EDUCATION—POWERS AND DUTIES

This division has charge of vocational work under the Federal Smith-Hughes law. Its supervisors visit the schools applying for aid for vocational work, pass on their qualifications, and endeavor to assign to the respective schools their fair apportionment of special Federal and state aid for vocational work. The directors of vocational education aid in training teachers in service, prepare courses of study and bulletins, hold conferences with the Federal supervisors, and with the teachers of Texas engaged in teaching Smith-Hughes courses, and assist the High School Division in affiliating schools in vocational work and in examining material submitted for accrediting.

THE DIVISION OF STATISTICS—POWERS AND DUTIES

The duties of this division are as follows: to send out blanks for taking the scholastic census; to check and pass upon all census rolls; to compile the scholastic census for the state, and to make up the Public School Directory; to send out blanks for superintendents' annual reports; to examine and approve these reports, and to list and compile all of the statistics furnished by such reports.

THE DIVISION OF AUDITS AND ACCOUNTS—POWERS AND DUTIES

This division keeps the records of receipts and expenditures for the entire school system of the state. It compiles the total figures of expenditures for the schools, and the amounts spent for each purpose. Every county and district report must be audited by this department. This division also sends out the warrants for the state per capita apportionment to the counties and the independent districts, and approves the bonds which all school depositories, or school banks, are required to file before the state school funds may be entrusted to their charge.

THE TEXT BOOK DIVISION—POWERS AND DUTIES

This division has charge of the details in regard to the purchase of free text books for the public schools. The first step toward furnishing text books free to Texas school children was taken in the compulsory education law of 1915, which stipulated that if a parent or guardian were unable financially to purchase books for his child, the parent or guardian might make proof to the school trustees of his poverty, and, in such case, the county superintendent must purchase the needed books and present the bill for payment to the county commissioners in the county of the child's residence. This provision was, however, of small effect, as parents preferred keeping their children out of school to undergoing the humiliation of declaring their poverty. An amendment to the State Constitution commonly termed the Free Text Book Amendment, fostered by the State Labor Union and by a number of educators was adopted by the people of Texas at the general election of 1918. This amendment increased the rate of the state ad valorem school tax from twenty cents to thirty-five cents on the one hundred dollars of property valuation and authorized the State Board of Education to set aside an amount sufficient to purchase text books for the public schools. It also authorized the legislature, if the available school fund should be insufficient to support the schools of the state for a period of not less than six months, to meet the deficit by appropriations from the general funds of the state. This clause also legalized the Rural Aid appropriations, the constitutionality of which had been questioned.

The legislature in 1919 limited the amount which might be spent for free text books to the proceeds of the fifteen-cent additional tax authorized by the

Text Book Amendment, and this was, in 1925, further reduced by the Thirty-ninth Legislature to the proceeds of a seven-cent tax. The average cost of text books per child during the nine years of the operation of the law has been $1.38.

Books are selected by a State Text Book Commission, consisting of the Governor, the State Superintendent, and seven other members, appointed by the Governor. Contracts with publishers are made by the State Text Book Commission and books are bought at prices fixed by these agreements.

The Text Book Division keeps the records of text book expenditures and of receipts from sale of text books by school officers; sends out forms for requisitions for text books; makes out the warrants due the text book companies and for expenses of distribution; prepares and sends out rules, instructions, and forms necessary in the distribution of books, makes up the annual text book reports and conducts the correspondence relating to text book matters.

THE DIVISION OF CORRESPONDENCE AND SUPPLIES

In this division are placed the desks of stenographers and of the heads of the division, the files of correspondence, and the supplies of forms and bulletins sent out by the state to the school officers and to the public generally. Here the mail of the department is opened, read, and assigned to the division by which it is to be answered, and the letters dictated to stenographers are typed.

THE STATE BOARD OF EXAMINERS—POWERS AND DUTIES

This division has charge of the grading of teachers' examination papers, the granting of teachers' certificates awarded on examinations or on college credits, the keeping of records of all certificates issued, and the classification of colleges applying for classification in order that Texas teachers' certificates may be issued upon the credits which they grant to their students.

Official certification of teachers in Texas was at first by county authorities. By the school law of 1840, and subsequent laws, teachers were granted certificates valid only in the county, though they might be recognized by the officers of other counties. As the state colleges were established, they were authorized to issue teachers' state certificates, valid anywhere in the state, and this authority was also granted to the State Department of Education. When efficient systems of city schools were developed, the city school authorities were permitted to grant certificates valid only in the city of their issuance.

Between 1910 and 1925, a gradual centralization in the state of the powers of certification of teachers followed. The colleges were deprived of the authority to issue certificates, and teachers were required to present or send to the State Department of Education college credits on which certificates might be granted. The powers of the county were gradually curtailed, until, in 1921, a law was passed providing that, after 1925, teachers' certificates should be issued only by the State Department of Education.

## VIII. PERMANENT AND AVAILABLE SCHOOL FUNDS

The permanent school fund began with the school lands granted to the counties by the school laws of 1839 and 1840. The Constitution of 1845 authorized the Legislature to set apart for a state permanent school fund, not less than one-tenth of all the revenues of the state derivable from taxation. The school law of 1854 added to the fund $2,000,000 in United States bonds, but part of these bonds were loaned to railroads to aid them in developing the state. A law of 1858 gave to the permanent school fund the proceeds of the sale of all public lands of the state, but this act was repealed during the Civil War. The loans made to the railways were secured by bond and mortgage, but as a result of the Civil War, some of the school money was lost, and the income on the principal practically ceased. From 1861 to 1870, no state funds were appropriated for support of the schools. The Constitution of 1866 made the sums due to the permanent fund a charge against the state. This Constitution also provided that for each section of public land granted to railroad companies or other corporations, an alternate section should become the property of the state permanent school fund. In addition, there was granted one-half of the proceeds of the sale of all public lands of the state. The Constitution of 1869 confirmed all donations previously made to the permanent school fund, and gave

all future proceeds from the sale of public lands. It also provided that the "available" state fund for the support of public schools should consist of one-fourth of all the general revenues of the state from taxation, and of a one dollar poll tax levied upon all male persons between the ages of twenty-one and sixty years. A law of 1873 repealed former provisions as to public lands granted to the permanent school fund, and gave to this fund one-half of the public domain, including one-half of the land certificates for lands previously sold, and alternate sections of all lands subsequently sold to railway companies or other corporations.

After the Reconstruction regime, the Constitution of 1876 confirmed the land grants to the permanent school fund of alternate sections of lands sold to railway companies and other corporations and gave to this fund one-half of the public domain of the state still remaining. This Constitution made the state available school fund to consist of the income on the permanent fund, plus an annual appropriation by the legislature of not more than one-fourth of all the revenue derivable from taxation, and the annual one dollar poll tax formerly devoted to this fund.

The school lands were placed under the management of the State Land Commissioner. State lands were commonly sold on a plan by which a purchaser paid, each year, one-fortieth of the purchase price, plus the interest. The interest is paid to the state available school fund, and payments on the principal, to the state permanent school fund. Moneys belonging to the state permanent school fund are invested in bonds, and the interest on these bonds is another source of revenue for the available school fund. This permanent fund may be invested in bonds issued by school districts for the purpose of building school houses. The state permanent school fund of Texas is now valued at approximately $75,000,000.

An amendment to the Constitution adopted in 1883 authorized a direct tax of not more than twenty cents on one hundred dollars of property valuation, plus one-fourth of all occupation taxes instead of one-fourth of the revenues of the state. The twenty-cent tax was, by the Text Book Amendment of 1918, increased to a tax of not more than thirty-five cents, with the proviso that free text books for the public schools must be purchased out of the available school fund. As the amount which may be used for the purchase of text books is now limited to a seven-cent rate, this leaves a twenty-eight-cent rate for the support of the schools.

In 1920, owing to war conditions, there was a great scarcity of qualified teachers in the state, and many were leaving the teaching profession for better paid work. Moved by the predicament of the public schools, a number of which were unable to continue work, the Legislature appropriated $4,000,000 from the general school funds of the state to be placed in the available school fund for the sessions of 1920–21 and 1921–22. Since this time, appropriations of from $1,000,000 to $1,500,000 per year from the general revenues of the state have been added to the state available school fund.

### What is the available school fund?

The state available school fund, then, at the present time consists of the following:

(1) The income of the state permanent school fund, including interest on land notes and interest on bonds.

(2) A poll tax of one dollar assessed annually upon all voters between the ages of twenty-one and sixty years.

(3) One-fourth of the proceeds of all occupation taxes.

(4) The proceeds of twenty-eight cents of a state tax of thirty-five cents annually assessed on every one hundred dollars of property valuation.

(5) Appropriations made by the Legislature from the general funds.

The sums derived from these sources are added, and the total amount is divided by the number of children of school age in the state. The quotient is called the state per capita apportionment. The amount for the session of 1927–28 was fifteen dollars. This is the amount annually granted to each school district for every child of school age residing in the district. In addition, rural schools receive special appropriations from the rural aid funds.

The per capita apportionment was at first small, but now amounts to nearly half of all the moneys spent for school maintenance in the state. It has grown from $1.81 in 1872 to $15 at the present.

## IX. COUNTY CONTROL AND SUPPORT OF SCHOOLS

By the school law of 1854 the county court, consisting of the county judge and the county commissioners became the board of county school commissioners, and the county judge became an ex-officio county superintendent of schools. The "radical" school law of 1873 provided for the election in each county of a board of five county school directors, who were required to select from their number a president who was charged with performing the duties of an ex-officio county superintendent of schools. This law was superseded after the Reconstruction regime, by the law of 1876, by the provisions of which the county judge was again made the chief county administrative officer of schools.

By the school law of 1884, the idea of a county superintendency of schools was strengthened in the addition of further school duties to those hitherto performed by county judges. It had frequently been pointed out by Secretary Hollingsworth and by Superintendent Baker that the rural schools could not be expected to improve without professional supervision. These officers urged that the law provide for the selection of county superintendents. After much effort on the part of Texas educators, a law was passed in 1887 allowing the county commissioners of any county, if they deemed it best to have a county superintendent of schools, to appoint such an officer, and, thereafter, to provide for his election at each general election. In 1905 the law was modified to require the county commissioners, on petition of twenty-five per cent of the voters, to call an election to determine whether a county superintendency should be established. This law was further changed in 1907 by making compulsory the election of county superintendents in all counties having a population of 3,000 or more children of school age. The law of 1905 still applies in the smaller counties, and Texas has 95 counties in which the county judge acts as ex-officio county superintendent.

Kindergarten class, Montrose Elementary School, Houston.

Other important duties which have been added since 1887 are to enforce the compulsory attendance law when no county attendance officer is employed, to supervise the taking of the scholastic census, to hear appeals from the decisions of district school officers, to organize and hold county teachers' institutes, to be the secretary and the executive officer of the county board of school trustees, to make and prescribe county courses of study, and to distribute free text books to the schools under the jurisdiction of the

county superintendent. In 1920 an amendment to the school law was passed authorizing the county board of school trustees to appoint for the county superintendent an assistant who should also act as county attendance officer.

The greatest weakness in the county administration of Texas schools is in the selection of the county superintendent by popular vote. This makes of the county superintendency a political, and not a truly professional office. Efforts of many friends of education in the state are now directed toward securing the passage of a law whereby the county superintendent will be chosen by the county board of school trustees.

### THE COUNTY SCHOOL TRUSTEES—POWERS AND DUTIES

The first county school boards of Texas were of the ex-officio type. From 1854 to 1866 the county judge and county commissioners constituted the county school board. In 1866 the county police court was made a board of school commissioners for the county. By the school law of 1870 each county was made one school district, and the county court was styled the County Board of School Directors. These directors were authorized to levy and collect a county tax, not to exceed one per cent, for the purpose of erecting school houses, to force parents to send their children to school for at least four months in the year, to make rules for the government of the schools of the county, and to settle any difficulties arising. By the second "radical" school law of 1871, the county school directors were superseded by one school director for each judicial district, appointed by the State Superintendent, and most of the powers of school control were, until 1873, concentrated in the state administration. The school law of that year provided for the election in each county of a board of five county school directors, who should select from their number a president to act as ex-officio county superintendent. No provisions for selecting school boards for the county were contained in the law of 1876, due to the desire to abolish all the machinery of Reconstruction. Not until the passage of the school law of 1911 was the position of county school trustees again created. The county school board, as it now exists, is composed of five members elected by the qualified voters of the common school districts of the county. Members are chosen for two-year terms, two and three, respectively, being elected in alternate years. Each of the four county commissioners' precincts is represented by one member, and the fifth represents the county at large.

The laws relating to the county board have been modified, but this board is not, as yet, charged with very important duties. Most of the authority is vested in the county superintendent, and the county board does not select the county superintendent, nor fix his salary, and it has no control over county school funds except to aid the county superintendent to apportion these funds on the basis of the scholastic census. The chief duties of the county board of school trustees are to classify the schools of the county into elementary and high schools; to confer with and advise the county superintendent, and the trustees of rural schools; to hold county meetings of trustees of rural schools; to prescribe for rural schools a county course of study, which must conform to state law; to consolidate schools for high school purposes, if a majority of the trustees of the schools concerned vote for such consolidation; in cases of school controversies, to decide appeals from the decision of the county superintendent; to fill by appointment all vacancies in the office of school trustee in the districts under their jurisdiction; to employ a county attendance officer, or to employ an assistant for the county superintendent, if they deem such action advisable. The county board has jurisdiction over all common school districts and over all independent school districts of fewer than five hundred scholastics.

### THE COUNTY SCHOOL FUND IS STILL IMPORTANT

Four leagues of land were granted to each county of Texas by the school laws of 1839 and 1840. Later laws granted the same amount of land for school purposes to counties created afterward, but counties recently created have received no such donation because all of the public domain of the state has been disposed of. In some cases the county school lands were sold at low values, the funds were badly invested, and eventually lost. In other cases, the lands were retained, or good investments of the funds were made, and the county permanent funds have become a substantial source

# CITY SCHOOLS IN SOUTH TEXAS

South Texas is advancing rapidly in the construction of modern school buildings. At the top is the Robert E. Lee elementary school in San Antonio; next is an elementary school in Laredo; third is the grammar school in Edinburg, while at the bottom is the immense Ball High School in Galveston.

of income for the schools of the county. The latest report of the State Superintendent shows the total value of the county permanent school funds of the state to be $11,415,353.81. The present Constitution of the State of Texas does not permit the levying of a county tax for education. The county available school fund, therefore, consists of the income of the county permanent fund, if there be one, plus the apportionment of state money to the rural schools.

## X. LOCAL CONTROL AND SUPPORT OF SCHOOLS

Direct control of schools in Texas except during the period of Reconstruction, has always been exercised by the parents of pupils or by boards of district trustees. A school district is a definite portion of territory set apart for the maintenance of one or more schools. The first school districts in Texas were called common school districts because they were districts marked out for the support of schools for children of all the people—the schools were "common" to all. This name is still applied to rural school districts in Texas which are under the control of three trustees and are more subject than are independent districts, to the control of county school authorities.

The term independent school district was first applied in Texas to cities and towns which assumed control of the schools within their limits, and now includes all districts having seven school trustees, to whom are granted special rights of school control not enjoyed by the common school districts. In early days the laws of Texas frequently created and abolished the school-district plan. The neighborhood schools were continued until 1866, except in the case of schools in large towns. By the school law of 1866, the district system was re-established, and continued through Reconstruction times until the passage of the school law of 1876, by which it was again abolished. It was re-established permanently by the school law of 1884, though certain counties were exempted from the district system until 1909.

### THE CITY INDEPENDENT SCHOOL DISTRICTS

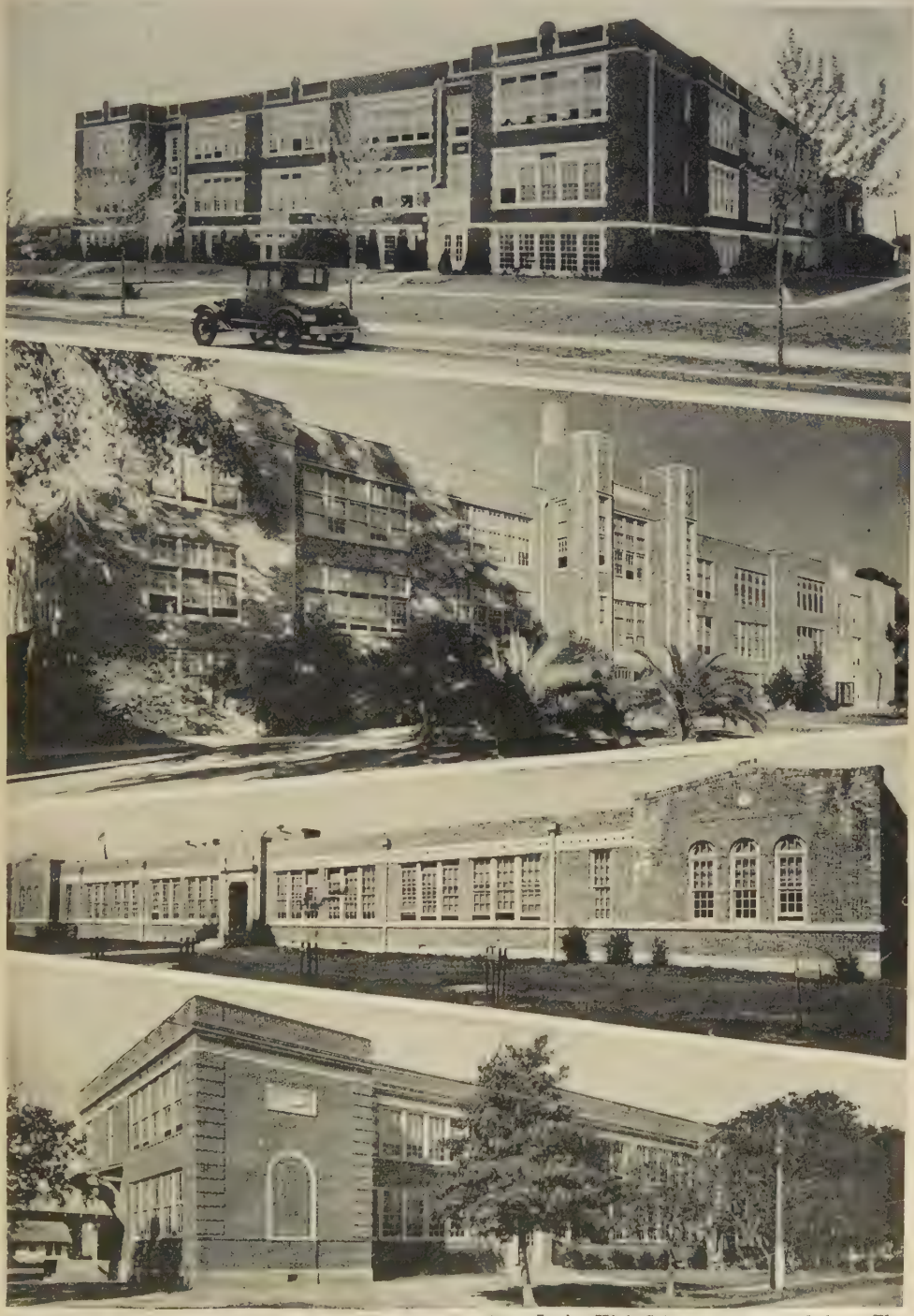
The first city school system in the state was established in Galveston by a law of 1846. Later special acts were passed authorizing other towns to form school systems. The Peabody Fund for education was an important influence in the development of city schools in Texas. In 1867 George Peabody, a New England philanthropist, donated a fund of about $2,000,000 to aid the former Confederate states in establishing public free schools. It was the policy of the board in charge of the distribution of this fund, to devote part of the money which they held in trust. to the aid of city and town schools which might become models to stimulate other schools to efforts to attain equal efficiency. The towns assisted through the Peabody fund were so selected as to establish such centres in several parts of the state. The Texas towns receiving aid at this critical time, between 1874 and 1880, were Belton, Brenham, Bryan, Dale, Denison, Fredericksburg, Gatesville, Harmony (Lancaster), Houston, Marshall, New Braunfels, Powell, San Antonio, Sherman and Weston.

In both independent and common school districts in Texas, school trustees are elected by the voters of the district for a term of two years. In the common school districts one trustee and two, respectively, are elected in alternate years; in the independent school districts three trustees and four, respectively, are elected in alternate years. In the city school systems and the large consolidated schools, the superintendent or principal acts as the executive officer of the school board, which usually reserves to itself only legislative and policy-making functions.

### THE "COMMUNITY" SCHOOL WHICH HINDERED PROGRESS

This plan of school organization was peculiar to Texas, and, for about thirty years, hampered the development of public free schools in many of the counties. After the Reconstruction period, this scheme was legalized in the law of 1876, probably with the idea of restoring the schools to local control. By this plan, any group of parents might annually decide to form a "community" for school purposes. Such a group of parents would present to the county judge an application for a community school, and, if such application were granted, as was usually the case, the county judge gave to the community a name, appointed three of the patrons as trustees, and committed to these trustees the apportion-

# SOME TYPES OF CITY SCHOOLS



Above is a Dallas High School with the Alexander Hamilton Junior High School of Houston below. The third is the Alamo Elementary School of Houston, a one-story type, particularly desirable for young children. At the bottom is the William B. Travis Elementary School in Houston, a two-story type. The city school buildings are generally admirable.

Photographs, McAnally, Dallas; Calvin Wheat, Houston.

ment of school money for the children to be taught in the community school. Under this plan new school communities were formed every year, local taxation for school purposes was rendered impossible, and no settled policies could be carried out. Frequent squabbles resulted, as any parent who did not approve of the management of the school by the trustees appointed, was free, the next year, to join a different community. The school law of 1884 allowed the people a choice between the district and the community systems and the latter was continued in some counties of the state as late as 1909.

### Local taxation for the support of schools

Local taxation is taxation levied upon district property only, for the support of the schools within the district. The city of Galveston was the first city of the state to levy a local tax for the support of its schools by a special law passed in 1846. The local school taxes levied by force in Reconstruction times were considered outrageous, and retarded the development of sentiment for local support of public schools. A general law of 1875 authorized incorporated cities and towns to levy local taxes for school support, the rate not to exceed one-fourth of one per cent. This limit was increased to one per cent in 1876, with the requirement that the rate of tax must receive the affirmative vote of two-thirds of the tax-paying voters. By an act of 1879, a local tax rate not to exceed fifty cents on the one hundred dollars, if carried at an election by a two-thirds vote, was authorized in all cities and towns. The further privilege of incorporating for school purposes only, was, in 1881, extended to cities and towns. But while the town schools were rapidly advancing, the rural districts were not allowed the same privileges of local taxation.

The first relief to rural districts was granted through an amendment to the Constitution adopted in 1883, whereby any school district was authorized to levy a local tax for the maintenance of schools and the erection of school buildings, not to exceed a rate of twenty cents on one hundred dollars of property valuation, provided that the rate of tax to be levied should be carried at an election by a two-thirds vote of the qualified tax-paying voters of the district.

For a quarter of a century progress in rural schools still lagged. Marked improvement was finally accomplished largely through an organization formed in 1907 called the Conference for Education in Texas. This organization aroused throughout the state sentiment for the advancement of education, and was instrumental in securing important amendments to the state constitution.

By the amendments to the Constitution, adopted in 1908, the rate of district tax was raised from twenty to fifty cents. Only a majority vote was required thereafter to carry a tax election, and funds derived from local taxation were permitted to be used for the equipment of school buildings in common school districts, as well as for the erection of buildings and the maintenance of schools. The latest development of local taxation for support of schools in Texas occurred in 1920. The Thirty-sixth Legislature passed in 1919 an amendment to the constitution removing entirely the limit of district taxation. This was to be voted upon at the general election of 1920. Under the leadership of State Superintendent Annie Webb Blanton, an organization called the Better Schools Campaign was formed to carry this amendment, which was adopted by a large majority. Though the Thirty-seventh Legislature, in 1921, imposed a district-tax limit of one dollar on one hundred dollars of property valuation, this limit can also be changed by law.

## XI. THE GROWTH OF PUBLIC HIGH SCHOOLS

Before the Civil War development of public high schools in Texas was retarded by the chartering of academies and the making of grants of public lands to such institutions; and the influence of many of these schools continued, even after the rise of high schools in the last quarter of the nineteenth century. Among the earliest high schools in Texas were Ball High School at Galveston, and the Houston, San Antonio, Brenham, Sherman, Denison and Marshall high schools. After the establishment of the University of Texas in 1883, the growth of high schools became more rapid, but the greatest development of public secondary schools in the state has taken place during the present century.

### THE INCREASE OF ENROLLMENT IN HIGH SCHOOLS

In 1910, there were enrolled in Texas high schools 36,978 pupils, and in 1920 79,216. It will be noted that in a decade the high school enrollment was more than doubled. This took place in a period in which the increase in the total population of the state was only 20 per cent.

Six years later there were 548 four-year classified high schools, 54 three-year classified high schools, and 19 two-year classified high schools. The high schools of independent districts enrolled 59,357 white boys, 69,212 white girls, 3,412 colored boys, and 6,327 colored girls, making a total of 138,308 high school pupils. The high schools of common school districts enrolled 20,375 white boys, 23,900 white girls, 1,313 colored boys, and 1,829 colored girls, making a total of 42,289 pupils. The total high school pupils numbered 180,597, nearly five times as many as sixteen years before.

In the independent school districts of Texas, which are chiefly town and city districts, about 21 per cent of the total school enrollment is in the high schools, and in the common school, or rural districts, approximately 8 per cent of the total enrollment is in the high schools. Girls constitute about 52 per cent of the total high school enrollment and boys 48 per cent.

### JUNIOR HIGH SCHOOLS NOT YET COMMON

Texas has not shown great enthusiasm for the junior high school. Texas has a seven-grade elementary school instead of the eight-grade elementary school common in other sections, and the system of uniform text books has made a special course of study for junior high schools difficult to arrange. Many of the school people also think the junior high school too expensive, except for the larger cities. In 1923 an excellent system of junior high schools was established in San Antonio, and Houston, El Paso, Brownwood, and other cities have recently established a number of junior schools.

## XII. CONSOLIDATION OF SCHOOLS AND TEACHERAGES

Marked improvement in the rural schools of Texas has been effected by uniting two or more districts. Consolidation follows the plan used in city schools of gathering large numbers of children into one school building and organizing them into grades. Such a plan costs less per child than does the plan of a one-teacher school, and is more effective, because by this arrangement a school can afford to employ better-trained teachers.

Junior high schools are not so common in Texas as in some other states, but in San Angelo the institution is so popular that in 1928 it was necessary to enlarge the building and employ more teachers.

Among the notable consolidated school systems in Texas are the Pharr-San Juan-Alamo system and the Perryton system. Pharr, San Juan, and Alamo are rural towns in the Rio Grande Valley, and the consolidated district is composed of about fifty square miles. The district maintains in each village two elementary schools, one for English-speaking and one for Mexican children. The Junior-Senior High School is situated midway betweer Pharr and San Juan. The district does not operate school busses for free transportation, but pays to parents a fee of ten cents for each day that each

School for Mexican children at Alamo in the Rio Grande Valley.

child living more than two miles from school attends the high school. By a friendly understanding, three of the seven school trustees of the district are regularly chosen from the vicinity of Pharr, and two each from San Juan and Alamo, the voters of all three places voting for all trustees.

The Perryton school district is situated in Ochiltree County in the Panhandle. The district contains nine school buildings, seven of which are so situated as to serve separate communities in the district. In four of these, some high school courses are given. The main high school building is situated at Perryton, where it is planned to establish a junior college. The high school has a large auditorium, well equipped laboratories, and an excellent library. Nine motor busses are used to transport pupils who do not live within reasonable walking distance of school.

### FREE TRANSPORTATION IN CONSOLIDATED DISTRICTS

Consolidation of rural districts can be made effective by providing free transportation for pupils. Many of the counties of Texas that have good roads and progressive county superintendents have been consolidating the small schools and using motor busses to transport school children to and from school. Transportation costs approximately twenty per cent of the cost of maintenance of a consolidated school. Several hundred thousands

School for Mexican children at Pharr in the Rio Grande Valley.

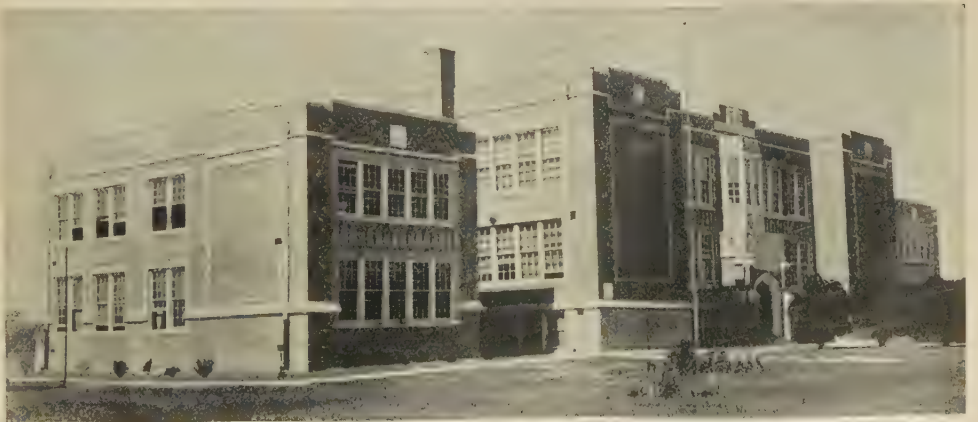
School for Mexican children at San Juan in the Rio Grande Valley.

# THE PHARR—SAN JUAN—ALAMO SCHOOLS

The Pharr Grammar School, Rio Grande Valley.

The San Juan Grammar School.

The Alamo Grammar School, Hidalgo County.



The villages of Pharr, San Juan and Alamo in the Rio Grande Valley have formed a consolidated district, and one superintendent looks after all the schools. This is the consolidated high school, near Pharr.

# SOME CONSOLIDATED SCHOOLS

Our fathers tell us of walking three miles to school, but the modern method consolidates several schools and transports children to them. First is Huffines School, Cass County; next is Academy High School in Bell County; third is the Perryton Consolidated High School, while at the bottom is the Cartwright School in Wood County.

# SCENES IN A HOUSTON HIGH SCHOOL

The Jefferson Davis High School in Houston has many things which the old-fashioned school did not have. Here is a class in physical training in the well-equipped gymnasium. The schools of Houston have attracted favorable comment from many quarters, and reflect credit upon the citizens, who demand the best for their children.

The John H. Reagan High School also has features absent from the old type of school. This machine shop is not intended to turn out finished machinists, but is intended to give to students that exact training of eye and hand which only manual work can do. Students do interesting things in this shop.

of dollars are spent yearly for this purpose.

### How teacherages may improve the schools

In many rural districts no suitable place can be found for the teacher to live. Texas has, to some extent, met this situation by providing living quarters for its teachers. One of the first districts in the state to provide a teacherage was McAllen, a town in the Rio Grande Valley. The Academy school district in Bell County, a consolidated district in the open country, has two teacherages, one for the principal and his family, and one for the women teachers.

In 1925–26 Texas was reported as having 1,028 teacherages. This is said to be the largest number to be found in any state. School authorities assert that such a provision is economical, since it lowers the cost of living for the teachers, gives them a home life, preserves their health, secures their regular attendance at school, and affords to the teachers better conditions for work.

## XIII. MUNICIPAL JUNIOR COLLEGES

In 1920 the city of El Paso opened the first municipal junior college in Texas. This city began a movement which, in less than nine years, has resulted in establishing fifteen municipal junior colleges. These institutions, as the name signifies, are two-year colleges supported by a city or town. In all cases, they were established under the leadership of the city superintendent of schools.

The motives leading to the founding of such schools have been apparently the following: to hold longer under parental guidance immature boys and girls who are ready for college work; to give the opportunity at home for a college education to many boys and girls who could not otherwise hope to attend college; to reduce the expense to parents of keeping their children at college; to provide for adults, opportunities for college work given at hours which will not interfere with the carrying on of their regular vocations; to permit teachers in the school system to continue their college work; to induce parents to provide good libraries and laboratories which may also be used by the high school; to secure for the public high school more mature and better trained teachers. This last end has been accomplished through the practice of employing for the junior college competent college specialists, each of whom also teaches one or more high school classes. It seems evident that the teachers' certificate law of 1921, according to the provisions of which a permanent certificate may be granted to a teacher only upon the completion of specified college courses, has had some effect in the rapid development of these institutions.

The municipal junior colleges are supported partly by city or town taxation, and partly by fees paid by students. Fees in the different institutions vary from $5 per term to $150; pupils residing outside the city or town supporting the college are usually charged higher fees than are resident pupils; in some cases the fee for non-residents is double that required of residents.

The El Paso Junior College was continued for seven years, at the expiration of which period it was merged with the State College of Mines at El Paso and became a state school. Other cities which led the way in establishing municipal junior colleges were Wichita Falls and South Park, Beaumont. The following additional cities are now maintaining junior colleges. These are in the order of their establishment, so far as the exact date could be obtained, Gainesville, Hillsboro, Paris, Victoria, Temple, Tyler, Houston, Ranger, Brownsville and Edinburg. San Antonio and Clarendon took over junior colleges already established.

A majority of the junior colleges are taught in the same building as the high school. South Park, Wichita Falls and Paris have junior college buildings separate from those of the high school, and Houston is planning the erection of a junior college. The Edinburg junior college has a group of five buildings, either completed or under construction.

The establishment of municipal junior colleges is only one evidence of the interest of Texas people in higher education. The universities, the senior colleges, and the private and denominational junior colleges are treated in another chapter. From the number of such institutions it would seem that attending college has come to be a matter of course in Texas.

Main Building, University of Texas, at Austin.

# COLLEGES AND UNIVERSITIES OF TEXAS

THE flourishing universities and colleges in the Texas of to-day have behind them a history that is suggestive and inspiriting. From the days of the Republic there has been steady faith in the value of liberal education, but the story of the colleges is a narrative in which failure, change of plan and hope deferred come as often into the chronicle as does success. Those who have struggled to realize their ideal for higher education have had to fight against scarcity of funds, for Texas as a commonwealth has been land-poor, and the sums that might have otherwise gone into college endowments have been commandeered for industrial development and other necessary ends. Centres of population have shifted, so schools have had to be given up and new ones begun. Even the University of Texas was more than forty years in taking the steps between the first formal plan of the Congress of the Republic and the instruction of students in the classroom.

The whole story of higher education in Texas would be an extraordinary narrative. At a time when most of the population still lived in log huts, scattered over prairie and plain, plans for colleges were made by men who had little money, but who did have boundless faith in the future of Texas. They had come from almost every state in the Union, and among them were many college graduates. Early travelers tell of seeing books brought from the East or the North as the most cherished possessions in early Texas homes. Though separated by many miles from their old homes many colonists were determined that their children should not fall back to a lower standard of education and culture.

When this book began to take form, it was planned to tell the whole story of education in Texas. However, Texas has many colleges, and has had more. The stories of many are thrilling, and often complicated. It was soon quite clear that the whole book would not be large enough to give a full account of all the attempts to build and maintain institutions of higher learning in Texas. Many of the early institutions were no longer in existence. Some were kept alive for years by the sacrifice and devotion of a few individuals, and when they

died the colleges died also. Others were combined. The Civil War put an end to others. Some which were suspended for a time were later reopened. Southwestern claims descent from Rutersville College, opened in 1840, only four years after San Jacinto. Greater Baylor, at Waco, Dallas and Belton, is the outgrowth of the tiny Baylor founded at Independence in 1845. Others have been founded in the present century. The stories of all these are interesting.

Since these stories are too long to tell, it was decided to emphasize the colleges and universities of to-day. These fall into four groups: the state-supported institutions of senior grade; the privately endowed institutions; the junior colleges; the institutions for negroes. Professional schools, except those belonging to a university, have not been mentioned.

In 1839 the Congress of the Republic passed acts which set aside lands for the endowment of a University, but the more pressing problem of public defense kept the lawmakers from going further with the project. In 1858, after annexation, the legislature appropriated to the University $100,000 in United States bonds, and reserved additional lands for this use. The Constitution of 1876 again authorized the establishment of the University, and gave a million acres of land in West Texas to insure the future of the institution. But it was not until 1881 that plans began to be definite. In that year the legislature passed a bill for the immediate organization of the University. By a popular vote the main university was placed in Austin, and the Medical College in Galveston. The academic and law departments were organized, and in 1883 the formal opening was held.

The government of the University is vested in nine Regents, selected from different sections of the state, nominated by the governor and appointed by and with the advice of the senate. The government of the various branches is entrusted to their respective faculties. The University operated without a president until 1895, when that office was finally created and Dr. Leslie Waggoner was chosen the first executive. In the selection of presidents, the University has been singularly fortunate. Such names as Houston, Menzes, Vinson, have meant much to the institution in the crises it has been called upon to face through the years. Dr. Harry Yandell Benedict, who has been connected with the University since 1899, was elected to the office of president in 1927.

When the University of Texas was organized it was voted that the medical department be placed at Galveston. It has close relations with the John Sealy Hospital, and offers an excellent medical course.

The College of Engineering developed from the College of Arts and became a separate school in 1894. The need for teacher-training brought about the establishment of the department of pedagogy, out of which grew the School of Education, organized in 1922. The continued demand for teachers brought about the opening of the summer session in 1897. The Bureau of Extension was organized in 1910, and in the same year the grow-

ing demand for graduate work caused the Graduate School to be established. The School of Business Administration became a separate school in 1922. The acquisition of the John Sealy Hospital at Galveston in 1891 made possible the opening of the School of Medicine. The College of Pharmacy was added to the main university in 1893, and the College of Nursing was established in 1897. An act of the 36th Legislature in 1919 constituted the State School of Mines and Metallurgy, which had been organized in 1911 at El Paso, a branch of the University of Texas.

The University of Texas has never been self-supporting, in spite of the avowed intention of its founders to make it so. Annual appropriations by the legislature have been necessary to finance the institution. However, oil royalties from University lands in recent years have made possible a new building programme. At this time the main university has an endowment of $17,515,000, with buildings and grounds valued at six and a half millions.

The grounds of the main university comprise the original tract of forty acres, with four additional tracts aggregating 650 acres situated at various points in and near the city of Austin. The original campus has 12 buildings, the Little Campus 12 buildings, and the New Campus accommodates a $375,000 dormitory and seven temporary buildings. The Texas Memorial Stadium has been partially completed at a cost of $500,000.

The University Library, the largest in the state, consists of the General Library at Austin, the Law Library, the Medical Library, and the Mining Library. The main Library houses several valuable collections, many of which have been given by friends of the University. Among the more notable are the George A. Aitken collection; the Genaro Garcia collection; the World War collection; the Southern History collection; the Wrenn Library; the Bexar Archives; the Austin papers; and the Stark collection.

Administration Building, North Texas Agricultural College at Arlington.

The main university employs a teaching staff of 329; the Medical Branch 58; the College of Mines and Metallurgy, 23. Students in all divisions of the University for the year 1926–27 numbered 11,316.

### AGRICULTURAL AND MECHANICAL COLLEGE

The Agricultural and Mechanical College of Texas is a land grant college, the oldest state-supported institution of higher learning. The Legislature of Texas, at the close of the Civil War in 1866, accepted the offer of 180,000 acres of land made by Congress to each state for the promotion of the study of agricultural and mechanical arts. The school was established in Brazos County, near Bryan, and was opened in 1876.

According to the constitution, it is a branch of the University of Texas, although its actual organization preceded that of the University by several years. It is now wholly independent of the University, and is operated along military lines.

The work of Texas A. & M. College has been expanded greatly in recent years. In addition to the teaching of liberal arts, agriculture and engineering, it has extended operations throughout the state through the Texas Agricultural Experiment Station system. Approximately 2,500 students attend A. & M. at the present time, and the teaching staff is about two hundred.

The college has a permanent endowment fund of $209,000, the proceeds of the sale of lands. The fiftieth anniversary of the institution was celebrated in October, 1926, at which time President T. O. Walton was inaugurated.

The North Texas Agricultural College, at Arlington, is a junior branch of the Agricultural and Mechanical College of Texas, and is governed by the board of directors of the older institution. The state legislature established the school in 1917, under the name of Grubbs Vocational School, but the present name was adopted in 1923. The plant consists of seven permanent, and eight temporary buildings.

The courses of instruction offered by North Texas Agricultural College include two years of affiliated high school work, and two years of standard college work in literary subjects, agriculture, engineering, household arts, business administration, pre-medical courses, and music, as well as certain vocational courses, trades and industrial courses. The enrollment for 1927–28 numbered 668.

In 1917, the State of Texas assumed control of John Tarleton Agricultural College at Stephenville, which had been established some years previously as a privately endowed institution. It was made a coeducational branch of A. & M. College, with junior college ranking. The school owns twenty buildings on a forty-acre campus, with a farm of five hundred acres in connection with the agricultural work of the school. New buildings and equipment are being added rapidly.

The enrollment for 1926–27 was 1,519, with eighty-one teachers. Courses are offered in sixteen departments of the college, including manual arts, agriculture, commercial arts, fine arts, and academic subjects. John Tarleton has an endowment fund of $75,000, and a loan fund available for students.

Texas Technological College is a new state institution at Lubbock on the plains, opened in 1925. It enrolled 1,000 students during the first year, and has increased rapidly since.

### Texas Technological College

The newest state-owned and controlled college in Texas is Texas Technological College at Lubbock, established in 1923 by act of the legislature. Its government is in the hands of a board of directors appointed by the governor of the state. Dr. Paul W. Horn is president.

This college opened in September, 1925, as a fully accredited coeducational institution of senior rank, offering work in the four schools of Liberal Arts, Engineering, Architecture, and Home Economics. Military training is optional. Graduate work is offered in eleven departments.

Texas Technological College is well-favored in its equipment. The grounds and fourteen buildings which have been

# FARM BOYS AND GIRLS AT ARLINGTON

The cadet corps of the North Texas Junior Agricultural College is standing at attention. All of the so-called land-grant colleges, which are aided by the Federal Government, must have military training.

The girls have physical training to correspond with the military drill, and here is the [illegible] in athletic uniform. The college was founded in 1917 as a branch of the senior institution at College Station.

completed are valued at more than two millions, and a $600,000 building programme is being carried out in 1928, including the erection of the Engineering Building, just completed, and the Chemistry Building, which will be ready for occupancy in the near future. One thousand students enrolled during the first year of the existence of the school, and this number was almost doubled during the second and third years. The faculty numbers 127.

### THE COLLEGE OF INDUSTRIAL ARTS

The College of Industrial Arts at Denton is the State College for Women, created by act of the legislature in 1901 and maintained by legislative appropriations. Its location was chosen by a commission of one person from each Congressional district. The college was formally opened September 23, 1902, with an enrollment of 182 students. The enrollment for 1926–27 was 2,600.

Affairs of the college are administered by a board of nine Regents appointed by the governor, with the president and faculty responsible for carrying out the policies of the board. Dr. L. H. Hubbard now holds the presidency.

A wide range of industrial and vocational subjects is offered in the curriculum, as well as subjects which give cultural training. The degrees of Bachelor of Arts, Bachelor of Science and Bachelor of Music are conferred upon completion of specified work.

There are twenty-six buildings on the campus, including six permanent and five temporary buildings, two cottages, seven dormitories, three senior houses, a post office, a laundry and other miscellaneous buildings. Their total valuation is nearly two million dollars. The general faculty consists of 130 members. In June, 1927, the institution conferred 247 degrees.

### SAM HOUSTON STATE TEACHERS COLLEGE

Early in the history of education in Texas the need was felt for special training for public-school teachers, but plans did not materialize until 1879, when the first Normal School, known as Sam Houston Normal Institute, was opened at Huntsville. This institution was financed through a $6,000 contribution from the Peabody Fund, to which was added $14,000 appropriated by the legislature. Control of the school was lodged with the State Board of Education until 1911, when a Board of Regents assumed control of all normal schools in the state. To encourage students to prepare for the teaching profession, scholarships covering expenses of tuition, board, lodging and laundry were awarded through competitive examinations in each legislative district. These were discontinued in 1910.

The success of Sam Houston Normal was apparent from the first. In the early years the course of study covered two years; this was later increased to three. In 1914–15, the four-year course offered two years of college work, and in 1918 four years of college work were offered. The school became a State Teachers College in 1922, and the name was changed accordingly.

The buildings of this school are valued at $360,000. There are eight buildings besides the president's house, the farmhouse and outbuildings. H. F. Estill has served as president since 1908. The enrollment of this college was 3,206 for the year 1926-27.

### NORTH TEXAS STATE TEACHERS COLLEGE

The need for other training schools for teachers became so pressing that in 1899 the legislature passed a law creating a state institution to be known as the North Texas State Normal College, which should be located at Denton on grounds previously occupied by the Texas Normal College, a private school. Funds were not available for the support of the school, however, until 1901, at which time it was formally opened with J. S. Kendall as president. More than five hundred students matriculated during the first year.

This college was at first a three-year institution, granting a permanent state teachers certificate upon graduation, and doing only one year of actual college work. In 1914 the curriculum was reorganized, giving the school junior college rank. The name was changed by legislative act in 1923 to North Texas Teachers College. The standards have advanced steadily, and the school has been improved by the addition of new buildings and equipment. At this time there are ten buildings on a campus of thirty-five acres. With it enrollment of more than three thousand students, North Texas Teachers College is one of

# FOUR STATE TEACHERS COLLEGES

The East Texas State Teachers College, at Commerce.

North Texas State Teachers College at Denton, the second in age of the eight.

Sam Houston State Teachers College at Huntsville. Austin Building, left, main building, right.

Stephen F. Austin State Teachers College at Nacogdoches is one of the successful newer institutions. The campus is most attractive. Texas has cause to be proud of its institutions to train teachers.

the largest schools of its kind in the United States.

### SOUTHWEST TEXAS STATE TEACHERS COLLEGE

In the same year that the North Texas State Teachers College was established at Denton, a similar institution was opened in Southwest Texas at San Marcos, under the name of the Southwest Texas State Normal. A twenty-eight-acre tract was provided, and upon this campus there have been erected six permanent buildings and other temporary structures, with a total valuation of $500,000.

The curriculum is identical with that offered by other state teachers colleges, and the name was changed to conform with the new status of these schools in 1922. The enrollment of Southwest State Teachers College in 1926–27 was 2,338, and sixty teachers made up the faculty. President C. E. Evans has served as head of the school since 1911.

### WEST TEXAS STATE TEACHERS COLLEGE

The West Texas State Teachers College, at Canyon, has grown from a prairie school doing high school work into a standard college. Since there were no standards to be met when the school was established by legislative act in 1910, the first year's work was shaped to meet the demands of the small group of students. In 1914, one year of college work was required for graduation; thereafter, two years were required until 1918, when all normal schools of the state were standardized as senior colleges requiring four years of full work for the Bachelor's degree.

Nearly three million dollars have been spent on the West Texas State Teachers College since its founding. There are now seventeen buildings on the campus. The Administration Building is said to be one of the best school buildings owned by the state. A new $273,000 Education Building was dedicated in 1928.

### EAST TEXAS STATE TEACHERS COLLEGE

The East Texas State Teachers College had its origin at Cooper, in 1888, as a private school known as the East Texas Normal College. It was later moved to Commerce, its present location. In 1917, the legislature arranged for the purchase and transfer of this school to the state, and its doors were opened as a state institution in October, 1917.

The properties of the college are valued at $800,000, including fifty-five acres of land, seven buildings and equipment. S. W. Whitley is president of the institution. The enrollment in 1926–27 was more than 2,500.

### STEPHEN F. AUSTIN STATE TEACHERS COLLEGE

The Legislature of Texas in 1917 provided for the establishment of a college at Nacogdoches, to be called the Stephen F. Austin State Teachers College. The World War delayed execution of plans for the school until September, 1923, when it was opened to students, with President A. W. Birdwell in charge. Two hundred acres of land were given to the institution, of which forty acres form the campus, the remainder being in farm land. The present value of grounds and buildings is estimated at $487,000. The enrollment for 1927–28 was 1,755, and forty-one faculty members were employed.

### SUL ROSS STATE TEACHERS COLLEGE

Sul Ross State Teachers College is situated at Alpine, in the Davis Mountains of West Texas. The college was established in 1920, and in the eight years since that time has acquired buildings and grounds valued at $252,000. During the session of 1926–27 the number of students reached 552. The library contains nine thousand volumes, and the teaching staff is composed of twenty-nine members, with H. W. Morelock president.

### SOUTH TEXAS STATE TEACHERS COLLEGE

South Texas State Teachers College at Kingsville is the latest school for the training of teachers to be established in Texas, having been provided for by legislative act in 1925. Of the 421 acres of land given by the citizens of Kleburg County to the college, fifty acres are in the campus, 106 acres provide an experimental farm and pasture land, and 265 acres await development. Six large buildings and several temporary buildings have been erected, and a library of nine thousand volumes has been accumulated. The work offered in the school is such standard work as is given by all Texas state teachers colleges. The enrollment in 1926–27 was more than one thousand. Dr. R. B. Cousins, the president has a staff of thirty-four teachers.

# FOUR MORE STATE TEACHERS COLLEGES

Sul Ross, at Alpine, named for Governor Lawrence Sullivan Ross.

West Texas State Teachers College at Canyon.

Southwest State Teachers College at San Marcos.

South Texas State Teachers College at Kingsville is the youngest and smallest of the eight state institutions of college grade especially designed to prepare young men and young women for the profession of teaching. These colleges are scattered throughout Texas, and the state has been generous in appropriations for their maintenance.

### PRIVATELY ENDOWED INSTITUTIONS—CHURCH AND NON-SECTARIAN

Several of this second group are really older than any of the state-supported institutions. They represent all the more important religious denominations as well as private philanthropy. As you will discover, many have grown out of older institutions, and others are the result of consolidations. In general the arrangement is alphabetical, as it would be rather difficult to class them by age.

### ABILENE CHRISTIAN COLLEGE

Abilene Christian College, at Abilene, became a four-year college in 1920. Before that time the institution, which had been opened in 1906 under the auspices of the Christian Churches of Texas, had been retarded in its growth because of frequent changes of management and administration, but in recent years its growth has been steady. The institution now comprises four schools: the College of Arts and Sciences with courses leading to the A.B. degree; the School of Fine Arts; the Training School, offering high school and elementary work; and the Department of Extension. Bible study is required of every student every year of attendance. The enrollment for 1926–27 was 813. The nine buildings of the plant are valued at $350,000. Batsell Baxter is president.

### AUSTIN COLLEGE

Austin College is intimately linked with the early history of Texas. It continues to operate under a charter granted in 1849 to the Presbytery of the Brazos of the Presbyterian Church. Dr. Daniel Baker acted as financial agent in establishing the college at Huntsville, and it was proposed that the institution should bear his name; but at his suggestion the name of Stephen F. Austin was chosen instead. This compliment was acknowledged by Austin with a gift of $2,700, the amount of salary due him as Commander-in-Chief of the Army of Texas and as Secretary of State.

Austin College was one of the few Southern institutions which did not close its doors during the Civil War, but that only four men were graduated between 1865 and 1876 speaks eloquently of the effect of the war. In 1876, after thirty-eight years of precarious existence at Huntsville, it was removed to Sherman. At the present time it has an endowment of $300,000, and its campus and five buildings are valued at $260,000. The old "main building" was burned in 1913, after which Sherman Hall, the gift of the citizens of Sherman, was built. This edifice has the offices of the administration, the auditorium and the library.

Austin College is coeducational, though most of its students are men. The enrollment for 1926–27 was 461. Dr. Thomas Stone Clyce has been president since 1900.

### BAYLOR COLLEGE FOR WOMEN

Baylor College at Belton has an ancient lineage, for the nucleus of the present institution was the old "Primary and Female Department" of Baylor University, chartered and established at Independence in 1845. Changes in the distribution of the state's population were responsible for the removal of the school to Belton in 1886.

The departments of the Baylor College Corporation at the present time are: Baylor College, with courses leading to the degrees of Bachelor of Arts and Bachelor of Science; Baylor Academy, offering four years of high school work; Baylor Conservatory of Fine Arts; and the Baylor College Kindergarten Training School.

Baylor College endowment is reported as $532,000, and the buildings and equipment are valued at $335,000. In 1926–27 the enrollment was 2,269, and the faculty numbered fifty teachers. Dr. John Crumpton Hardy is president.

### BAYLOR UNIVERSITY

Baylor University, originally situated at Independence, was chartered in 1845 by the Republic of Texas. It was established by the Texas Union Baptist Association, and Rev. Henry L. Graves was chosen the first president.

In 1848 the institution was placed in the charge of the Baptist State Convention, which was organized in that year. In 1851 Rev. Rufus C. Burleson became president, and a School of Law was added. In 1861 Dr. Burleson left Baylor and went to Waco, where he established Waco University under the direction of the Trinity River Association, which later was merged with the Baptist General Association. In 1886 Baylor University and Waco University were united under

# CAMPUS SCENES AT THE TWO BAYLORS

On the left is a view of the campus of Baylor University in the heart of the residence section of Waco. On the right is a campus view of Baylor College for Women at Belton, with Alma Reeves Chapel in the corner. The building was the gift of a student of the old Baylor at Independence, and her granddaughter is a recent graduate of the institution.

the name of Baylor University at Waco, Dr. Burleson becoming the first president of the new institution. The Baptist denominations were at that time consolidated as the "Baptist General Convention of Texas" and this body continues to control the university through a board of thirty-one trustees, of which Hon. Pat M. Neff is president.

Baylor University now consists of nine schools and colleges. The College of Arts and Sciences, the School of Education, the School of Law, and the School of Music are at Waco. The College of Medicine, the College of Dentistry, and the College of Pharmacy are at Dallas.

Daniel Baker College at Brownwood was named for a pioneer Presbyterian minister who devoted his life to education.

The Baptist Memorial Sanitarium in Dallas was made a part of Baylor University in 1920, and consequently the School of Nursing became a part of the university also.

Baylor was the first college in the South to admit women on equal terms with men to all academic privileges. In 1926–27 the enrollment in all schools reached 3,395. The university has an endowment of $600,000; buildings valued at $1,264,000, grounds valued at $220,000, and a library of fifty thousand volumes, which includes a notable Browning collection, the result of unremitting labors of Dr. A. J. Armstrong. The president is Dr. Samuel Palmer Brooks.

During 1927 and 1928 there was much discussion in the Baptist denomination concerning the advisability of seeking a new site for Baylor, but it was decided to leave the institution in Waco. One result of the discussion was a campaign for a larger endowment and modern buildings. The citizens of Waco pledged more than $400,000 for a chapel; the Baptist Women's Missionary Union has undertaken to provide a residence hall for women students; and a more adequate endowment is assured by the renewed interest of alumni and friends of the University.

### DANIEL BAKER COLLEGE

Daniel Baker College, at Brownwood, has an enrollment of 417 students. Rev. W. T. McClelland, a pioneer Presbyterian preacher, established the school in 1889, and it was named for another pioneer minister of the state, who had earlier aided Austin College, and the cause of education in general. The College offers courses in Arts and Sciences, in Education, in Home Economics, and in the Fine Arts.

The early years of the college were beset by financial difficulties, but in 1903 control was assumed by the Southern Presbyterian Church, and gifts and bequests have raised the endowment to $250,000. The campus, the athletic field, and the four buildings of the institution are valued at $160,000. Plans for enlargement of the institution are under way. Dr. S. E. Chandler is president.

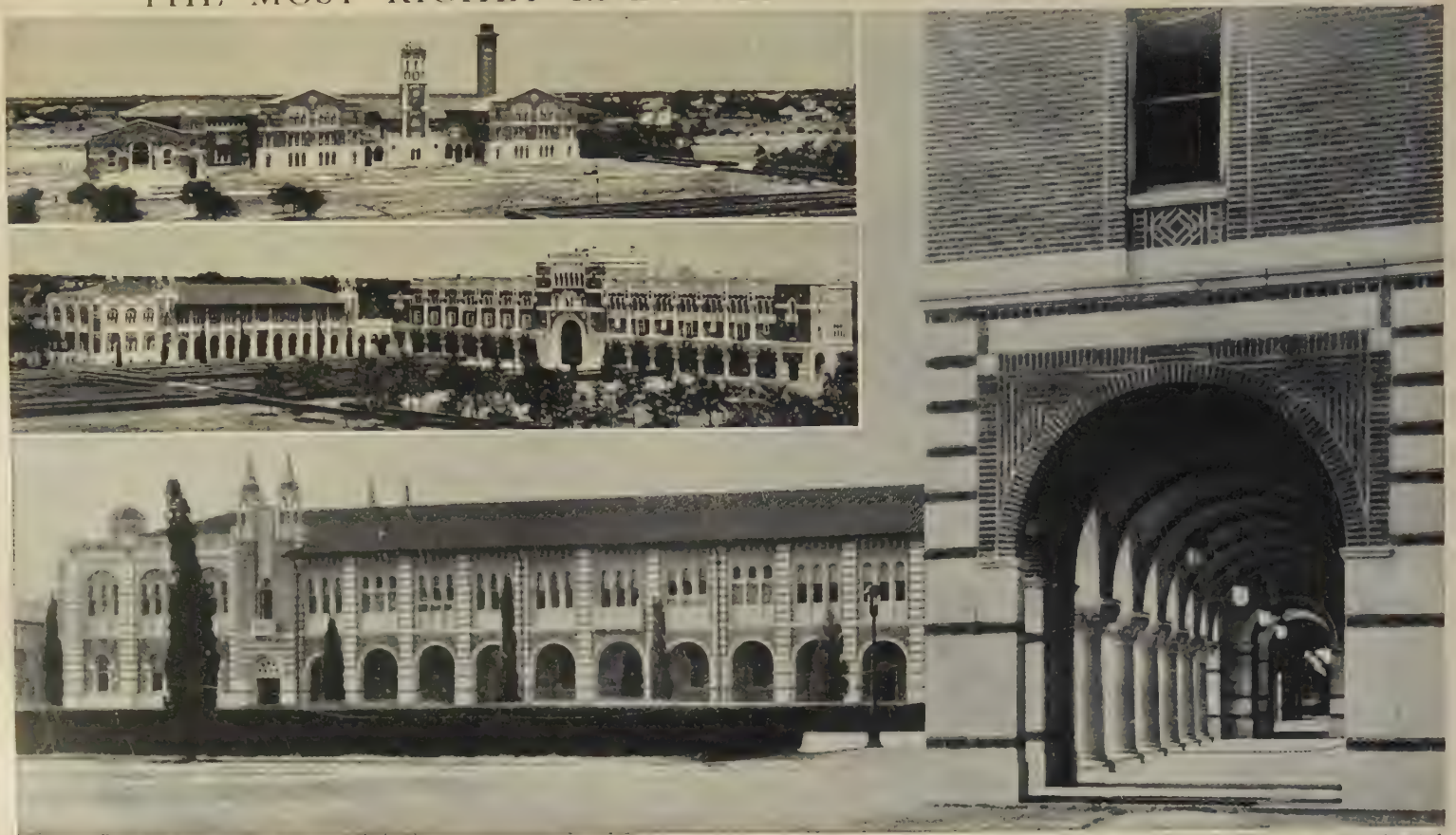
### HOWARD PAYNE COLLEGE

In 1889 the Pecan Valley Baptist Association established Howard Payne College at Brownwood. The college opened its doors to students in 1890. It attained the rank of a junior college in 1897, and in 1914 its rank was raised to that of senior college. An academy is maintained in connection with the college. The resources of Howard Payne College at this time aggregate $645,000, and include a campus of seven acres, an athletic park, ten buildings, and a library of fifteen thousand volumes. During 1926–27 the attendance in the college department was 437. Dr. Edgar Godbold is president.

### McMURRY COLLEGE

McMurry College is a coeducational institution of the Northwest Texas Conference of the Methodist Episcopal Church, South. It was established at Abilene in 1922 upon an offer by that city of a forty-acre campus and $300,000 in money. For two years McMurry was a junior college, but in 1925 the

# THE MOST RICHLY ENDOWED INSTITUTION IN TEXAS



Rice Institute in Houston owes its origin to the benevolence of a Texan, William Marsh Rice, who left the principal part of his estate to found an institution devoted to the "advancement of letters, science and art." The fourteen buildings are admirably arranged and the Institute has been a success from the beginning. Courses in engineering and architecture are offered in addition to the usual college courses, and graduate instruction is also given.

school became a senior college, and the first B.A. degrees were conferred in June, 1926.

During 1926–27 McMurry enrolled 470 students and employed fourteen teachers. The institution now has five buildings. Dr. J. W. Hunt has acted as president since the founding.

### OUR LADY OF THE LAKE COLLEGE

The Roman Catholic Church maintains several colleges in and around the city of San Antonio. Our Lady of the Lake College was opened as a secondary school in 1896 under a charter granted in 1879 for all schools of the Catholic Congregation in Texas. The rank of the college was raised in 1919 when a full four-year college course was introduced. Its work was recognized by the Association of American Universities in 1927. Ten buildings, including the convent and conventual church, are appraised at $1,500,000. The faculty of forty-one sisters of the Order of Sisters of Divine Providence serve without compensation, their salaries being returned to the endowment fund of the college.

### INCARNATE WORD COLLEGE

Incarnate Word College has a College of Arts and Sciences, a School of Music, a School of Art, an academy or preparatory school. The Sisters of the Incarnate Word founded the school in 1900 for the education of girls and young women. In 1922 modern fireproof residential buildings were erected, and in 1926 a modern Science Hall. Buildings are valued at $935,000, and the 220-acre campus at $600,000.

### ST. MARY'S UNIVERSITY

St. Mary's University, at Woodlawn Mills on the outskirts of San Antonio, is a Catholic institution of learning established by the Society of St. Mary in 1852. Through various changes of name and policy, and finally through union with St. Louis College, it has grown to be a college of senior value. The faculty of fifteen continues to be chosen largely from members of the Society of St. Mary. Courses leading to the degree of B.A. and B.S. are offered.

### ST. EDWARD'S UNIVERSITY

St. Edward's University, a school for men, was established by the Roman Catholic Church in Austin, in 1881. Rev. Joseph Burke is president of the school at this time. The university plant is valued at about half a million dollars.

### RICE INSTITUTE

The Rice Institute is an endowed university established by the late William Marsh Rice in the city of Houston in 1891. A self-perpetuating board of seven trustees was chosen by Mr. Rice to administer affairs of the institution, which is "non-political, non-sectarian, dedicated to the advancement of letters, science and art." The original gift of endowment was $200,000, and at Mr. Rice's death in 1900 his estate, amounting to approximately ten million dollars, was left to Rice Institute with the provision that the legacy be divided into two equal parts, one for endowment and one for equipment. The trustees have carried on the work of the University out of the income, keeping the principal of both endowment and equipment funds intact.

A tract of three hundred acres near Houston was secured for the institution, and in accordance with a carefully prepared plan, eight buildings have been completed at a cost of $14,000,000.

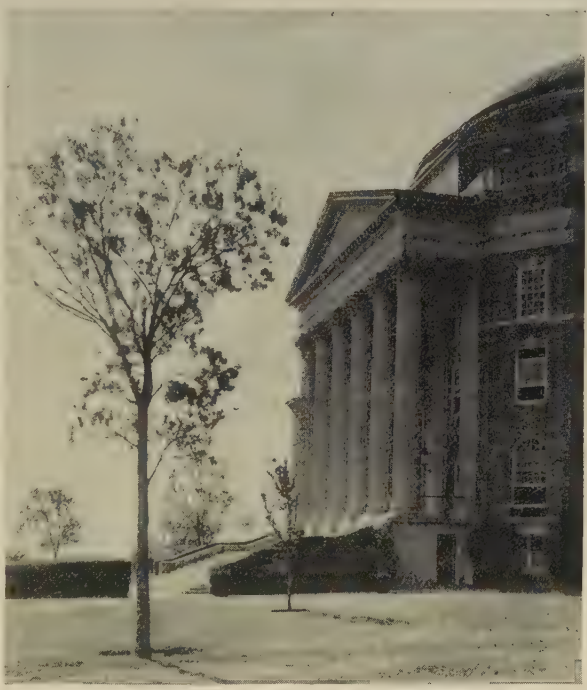
The formal opening of Rice Institute, held in the fall of 1912, was made the occasion of an academic festival which distinguished scholars and scientists from many foreign countries attended.

The student body of Rice Institute is limited to approximately thirteen hundred members, with an annual freshman class of four hundred students, who are admitted by competitive examination. Courses of study are offered in Liberal Arts, in Science, in Engineering, and in Architecture; graduate work for the M.A. and Ph.D. degrees may be pursued in the several departments of the Graduate School. Dr. Edgar Odell Lovett has been president of Rice Institute since its establishment.

Simmons University at Abilene was sponsored in 1890 by the Sweetwater Baptist Association under the name of Abilene Baptist College. In 1891 Dr. James B. Simmons of New York gave liberally toward the building fund, and in appreciation of his generosity the name of the institution was changed to Simmons College. Dr. Simmons later bequeathed his fortune to the institution.

The school was opened to students in 1892, and in 1902 the institution became a four-year college. In 1925 the charter was amended to change the name to Simmons University. In 1927 the school was admitted to the Southern Association of Colleges, and shortly afterward to the American Association. The enrollment in 1926–27 numbered 1,705, with a faculty of fifty-one teachers. Simmons University has an endowment of half a million dollars, and buildings and grounds worth a million. Dr. J. D. Sandefer is president.

In 1910, the five annual conferences of the Methodist Episcopal Church, South, in Texas established the Texas Education Commission, a body formed for the purpose of founding an adequately endowed university. The Commission decided to accept an offer made by Dallas of valuable tracts of land north of the city and a cash gift of $300,000. A charter for the institution was filed in April, 1911. In the organization of the new university, Polytechnic College, a Methodist institution at Fort Worth, was absorbed. Dr. Robert S. Hyer was chosen president, and the first session began in September, 1915.



Southern Methodist University at Dallas was opened for students in 1915 and at once took high rank. It has a considerable endowment and a large student body.

Southern Methodist University now comprises the following schools: the College of Arts and Sciences; the Graduate School; the School of Theology; the School of Engineering; the School of Law; the School of Fine Arts; and the School of Business Administration. The degrees of Bachelor of Arts, Bachelor of Science, Bachelor of Music, Bachelor of Divinity, Master of Arts, Master of Science, and Master of Divinity are awarded. The faculty numbers 147, and the attendance during 1926-27 was 2,368.

One hundred and thirty-two acres of the university land has been set aside for a campus, upon which fourteen of the buildings provided for in the comprehensive building plan have already been constructed. Dallas Hall, the gift of the citizens of Dallas, is the dominating building on the campus. McFarlin Auditorium, completed in 1926, was the gift of Mr. and Mrs. R. M. McFarlin of San Antonio. Other buildings are Harper Theological Building, Hyer Hall of Science, a men's dormitory and two dormitories for women, a gymnasium and a stadium, of which one unit is complete.

Southern Methodist University has an endowment of more than two million dollars, and buildings and grounds valued at $1,400,000. Dr. C. C. Selecman has been president of the university since 1923.

## Southwestern University

Southwestern University is the heir of the first institution of higher learning in Texas, as well as the heir of three other colleges established by the Methodist Church before 1870. The seal of Southwestern bears the names of these four institutions: Rutersville College, Wesleyan College, McKenzie College, and Soule University. Rutersville College, named for Dr. Martin Ruter, the earliest Methodist missionary to the Texas Republic, was chartered in 1840, and opened with only twenty-five students.

Wesleyan College was projected by the Methodists in 1844 at San Augustine. When its buildings burned in 1866, the state was experiencing the hard times which followed the war, and the school was not rebuilt. Another Methodist school was begun in 1841 in a log house at the home of Rev. J. W. P. McKenzie, near Clarksville. After a few years four large buildings were constructed, with a capacity of three hundred students. This school was closed in 1871 because of the advanced age of the president. Finally, Soule University, the direct ancestor of Southwestern University, was built at Chappell Hill, in 1856. The Civil War caused it to suspend teaching for a time, and epidemics of yellow fever in 1867 and in 1869 threatened the life of the school after it was re-opened. Dr. Francis Asbury Mood, the president of the institution, proposed to the Texas Methodists the establishment of a central university—thus Southwestern came into existence. For two years it was called Texas University, but the charter in 1875 designated it as Southwestern University.

The first home of the new school was a building which had been erected for the old Georgetown College. This served until 1898, when a new building was built. At present there are six buildings on a fifty-five-acre campus within the corporate limits of Georgetown.

Southwestern University has an endowment of $200,000, and buildings and equipment valued at $400,000. Its faculty is composed of twenty-eight teachers. The library has 28,000 volumes. The degrees of B.A., M.A. and B.D. are conferred by the University. Rev. King Vivion is president.

### TEXAS WOMAN'S COLLEGE

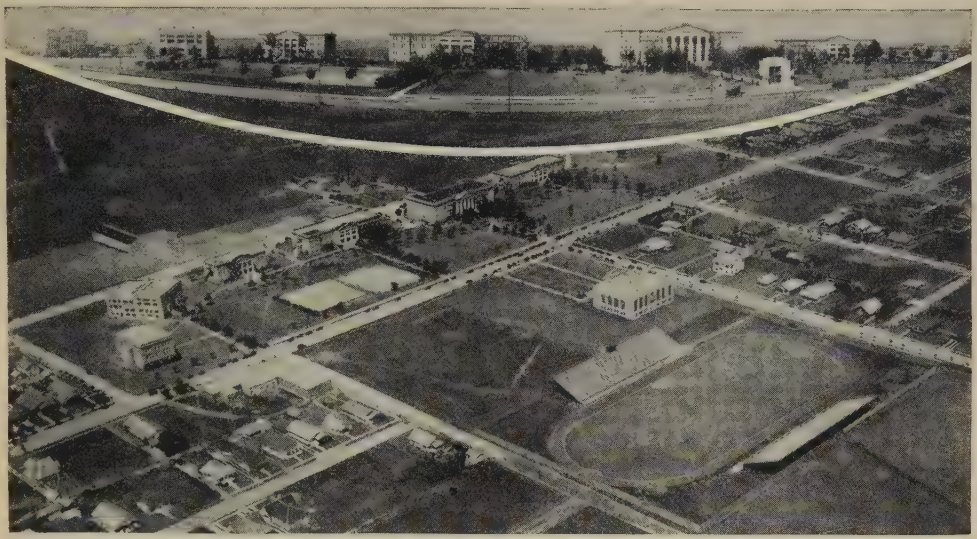
Texas Woman's College occupies the site and buildings of the old Polytechnic College, which was incorporated into Southern Methodist University upon the organization of that institution in 1915. At that time Polytechnic gave up its name, and its character as a coeducational school to become a woman's college.

Texas Woman's College at Fort Worth is under the control of the Methodist Episcopal Church, South. This is the Administration Hall, recently constructed. There are several other buildings.

Four years of standard college work are offered by Texas Woman's College. Its government is vested in twenty-five trustees selected by the Methodist Episcopal Church, South. The buildings and grounds, valued at a million dollars, are located on Polytechnic Heights, in the city of Fort Worth. Dr. H. E. Stout is president of the college.

### TEXAS CHRISTIAN UNIVERSITY

Texas Christian University is an outgrowth of a private institution of learning which was opened in 1873 at Thorp Springs by two brothers, Addison and Randolph Clark. This school was first known as Add-Ran College; later, upon becoming the property of the Christian Churches of Texas, the name was changed



Texas Christian University at Fort Worth, grew out of an Add-Ran College at Thorp Springs. It was then removed to Waco, and then to Fort Worth in 1910, and has recently received a large endowment. It is the property of the Disciples of Christ in Texas.

to Add-Ran Christian University. In 1895 Waco was selected as a more desirable location for the college, and it was removed to the site of the old Waco Female College. In 1902 the name became Texas Christian University. When the main building was burned in 1910, Fort Worth offered a fifty-acre campus and $200,000 as an inducement for the school to move to that city. This offer was accepted, and with the change a building programme was begun which has resulted in the erection of seven large buildings and a half-million-dollar boulevard leading from the city to the college. By a recent bequest, the endowment has been increased to approximately five million dollars. The University now consists of five departments: Add-Ran College of Arts and Sciences, which perpetuates the name of the original school; Brite College of Bible; the School of Fine Arts; the School of Education; and the Graduate School. In 1927 the faculty numbered seventy-three, and is larger now.

### TRINITY UNIVERSITY

Trinity University, at Waxahachie, one of the oldest educational institutions in the state, was established by the Cumberland Presbyterian Church in 1866. The name of Trinity University, and the location at Tehuacana were selected in 1868, and Rev. W. E. Beeson was chosen as first president. The school was opened to students in September, 1869. In 1872 a Department of Law was added to the College of Liberal Arts, but this profes-

Trinity University at Waxahachie was established by the Cumberland Presbyterian Church, but is now in the control of the Northern Presbyterian Church. This is the R. O. Watkins Gymnasium.

sional branch was discontinued in 1882, perhaps in anticipation of the founding of the State University.

In 1902 Trinity was moved to Waxahachie. When the Cumberland Presbyterians united with the Presbyterian Church, U. S. A., in 1906, the university became the property of the Synod of Texas of the Presbyterian Church, U. S. A.

Trinity University has an endowment of $725,000, and an annual income of $112,000. The campus of thirty-three acres and the five buildings are valued at $311,000. The enrollment during the 1926–27 session was 630. Dr. John H. Burma is president at the present time.

four-year college. A secondary school is usually correlated with the college department.

Blinn Memorial College, at Brenham, is an endowed Methodist School, of which B. E. Breihan is president. Eight teachers are employed.

Burleson College, at Greenville, is a co-educational school established by the Baptist Church, with buildings and grounds valued at $195,000. In 1928 it and Rusk College, at Rusk, were consolidated.

Carr-Burdette College, Sherman, was founded as a school for girls in 1894 by the Christian Churches of Texas. Dr. Cephas Shelbourne is its president. The

Wichita Falls Junior College is unusually well equipped for its work, and is said to be the only junior college in Texas offering absolutely free tuition to residents of the city.

### Texas Presbyterian College

Texas Presbyterian College is a senior college which offers four years of work leading to the B.A. and B.M. degrees. There is also an academy in connection with the college. The school is the property of the Southern Presbyterian Church, and was established at Milford in 1902 upon the gift of the city of Milford of a ten-acre campus and $25,000. The campus now comprises forty acres, with five buildings valued at $325,000. The president is L. E. Petty.

### Independent Junior Colleges

More than a score of independent junior colleges, established and fostered by various churches and individuals, are recognized as colleges of the first rank in Texas. These schools offer freshman and sophomore work of the standard

college has an endowment of $5,000, and a plant valued at $175,000. During 1926–27 seventy-five students were in attendance.

Carroll College for girls is a Baptist school located at San Antonio in 1926. Fifty-three students were enrolled in 1926–27.

Clifton College, Clifton, is affiliated with the Lutheran Church. Its plant represents an outlay of $122,000. The student body averages a hundred, and there are eight teachers.

The College of Marshall was founded by the Southern Baptist Church in 1914 at Marshall. Its property is estimated at $300,000, and it had an enrollment of four hundred during 1926–27.

Decatur Baptist College, at Decatur, has an endowment of $29,000 and buildings and grounds worth $250,000. The faculty numbers ten and a student body

of one hundred and fifty-eight enrolled in 1926–27.

Gunter College, formerly located at Gunter, has recently been moved to Littlefield, with J. R. Freeman as president. This school is owned by the Christian Church.

Jacksonville Junior College was located at Jacksonville in 1899 under Baptist auspices. The institution has an endowment of about $15,000.

Kidd-Key Conservatory, at Sherman, is notable for its splendid Department of Fine Arts. This school for girls was established as a private enterprise, and became the property of the Methodist Episcopal Church, South, in 1877. The faculty numbers forty, and the student body approximately four hundred.

Lon Morris College is one of the most liberally endowed junior colleges in the country, having been given an endowment of $100,000 by Rev. Lon Morris in 1923. The school was originally known as Alexander Institute, and was founded at Cooper, but was moved to Jacksonville upon becoming the property of the M. E. Church, South, in 1875.

Randolph College at Cisco, originally a private school, was purchased by the city of Cisco in 1922 and presented to the Christian Churches of Texas.

St. Mary's College at Dallas was founded by the Right Reverend Alexander Charles Garrett, Bishop of the Episcopal Diocese of Dallas, in 1889. Seven buildings have been erected upon the thirteen-acre tract within the city.

Schreiner Institute, a school for boys established by the Southern Presbyterian Church at Kerrville, opened in 1923. Its properties aggregate $401,000, and it has an endowment of $200,000.

Texas Military College was established as a private school for boys by Col. Louis C. Perry. The school has equipment valued at $250,000.

Thorp Springs Christian College, at Thorp Springs, is under the management of the Church of Christ. It opened in 1871, and has an endowment of $170,000.

Paris Junior College is housed in an impressive building and is the pride of the city.

Trinity College, at Round Rock, is maintained by the Swedish Lutheran Church. H. C. Alden is president.

Wayland Baptist College, at Plainview, was founded in 1908. It bears the name of Dr. J. H. Wayland, who made the original gift of $10,000 toward its founding. The school was opened in 1910, and in 1918 became an accredited junior college.

Weatherford College was located at Weatherford in 1873, and is the property of the Northwest Texas Conference of the Methodist Episcopal Church, South. The institution has persisted through adversity until at this time it is a recognized junior college.

Westmoorland College, San Antonio, was organized in 1894 by the Methodist

Episcopal Church South. Enrollment for 1926–27 was 158. Buildings, grounds and equipment are worth $774,000.

Wesley College was founded at Greenville in 1905 by the Methodist Episcopal Church, South. It employs twelve teachers and has an enrollment of 400. Holdings are valued at $465,000.

Westminster College, Tehuacana, is another Methodist institution established in 1898 on the original site of Trinity University. It is a coeducational school, with a teaching force of ten and an enrollment of one hundred.

### Municipal junior colleges

The movement to establish municipal junior colleges as a part of the public school system has been launched in Texas during the past ten years, and is fast gaining momentum. There are already fifteen junior colleges of this type and each year sees the addition of others. These schools are coeducational and the buildings and grounds are the property of their respective cities. They are governed by the city boards of education. No provision is made for boarding students. All of these municipal junior colleges are mentioned in the chapter on Public Education.

### Colleges for negroes

Naturally none of the institutions for the higher education of negroes is as old as many of the institutions for whites, though two are more than fifty years old. Some of them are doing excellent work, though most of them have been hampered by lack of funds both for salaries and equipment. There is further discussion of negro education in the chapter devoted to that race.

The State of Texas recognized the need for higher education for negroes as early as 1876, when Alta Vista Agricultural College, modeled after Texas A. & M. College, was established. This school failed of its purpose, and in 1879 was converted into a normal school for training teachers of negro children under the name of the Prairie View Normal School. An industrial annex was made in 1899. The college department enrolled over six hundred students and employed fifty-eight teachers during the 1926–27 session. College courses extend over four years each and include the Normal Arts Course, the Agricultural Course, the Mechanical Arts Course, and the Household Arts Course. Certain trade courses are also offered. This college is managed by the Board of Regents of Texas A. & M. College, of which it is a branch. It is located near Hempstead, in Waller County, where it holds 1,435 acres of land in woodland, pasture and farm.

Bishop College is a coeducational school founded in 1881 at Marshall by the American Baptist Home Mission Society. Four hundred and seventy-eight students were enrolled, and twenty teachers were employed in 1926–27. Grounds and equipment of this institution are valued at $360,000.

Guadelupe College was founded at Seguin in 1884 by the Guadelupe Baptist Association. Since 1887 it has been engaged in higher education.

Mary Allen Seminary, at Crockett, was established by the Presbyterian Church in 1886. Its grounds and equipment are valued at $147,000.

Samuel Huston College bears the name of Samuel Huston of Iowa, who contributed largely to the institution when it was organized in 1900. The school is located at Austin and is managed by the Freedmen's Aid Society of the Methodist Episcopal Church.

Texas College, Tyler, was opened by the Colored Methodist Church in 1894. Four hundred and seventy students attended during the year 1926–27, with a hundred and seventy in college classes.

Tillottson College was located at Austin in 1881 by the American Missionary Society of the Congregational Church. Work is offered in both college and secondary departments, but the demand for college work has steadily lessened. Vocational work is also given.

Wiley University, at Marshall, was established in 1873 by the Freedmen's Aid Society, and received its charter in 1882. Work is of first class college grade and is recognized in other states as well as in Texas. The university comprises the college, the academy, and special music and commercial courses. Some industrial work is offered. The campus consists of 60 acres, and the buildings are valued at $275,000.

Paul Quinn College was founded in 1881 at Waco by the African Methodist Episcopal Church, aided by the Freedmen's Bureau. The majority of students are of elementary grade.

The Public Library at Houston.

# LITERATURE AND ART IN TEXAS

## I. THE EARLY WRITERS

FOR centuries unknown the Karankawas of the coast, the Comanches of the plains, and the Apaches of the western borders had led a fierce and nomadic existence within the confines of Texas, when mustang horses—symbol of the advent of European civilization—began tossing their long manes on the prairies north of the Rio Grande. In the two centuries that followed, Spanish conquistadores, French explorers, and American adventurers made their way across the trailless expanse of Texas; the flags of France, of Spain, of Mexico, and of more than one filibuster from the United States waved on its soil. Over a hundred years ago Stephen F. Austin and his "Three Hundred" began their brave business of "redeeming Texas from the wilderness." In 1836 Texas became a republic and remained such for nine years. Then as a state, as a unit in the Confederacy, and again as a state, she continued the variety of her career. It is not too much to say that Texas has had the most varied, the most romantic, and the most intensely realistic history of any state in the Union.

Of records concerning this history there has been no dearth; yet the present chapter is the first attempt at a survey of Texas literature. If one is to believe the great traveler, Frederick L. Olmsted, who recorded his journey through Texas in 1856, there was before the Civil War no demand for literature in Texas—and where there is no demand for a product there is likely to be little of it offered. "In the whole journey through Eastern Texas," says Olmsted, "we did not see one of the inhabitants look into a newspaper or a book." Yet the itemized account of a lot of books purchased by Stephen F. Austin in New Orleans twenty-one years before Olmsted arrived, shows the interest of the "Father of Texas" in Horace Walpole, Sir Walter Scott, Bulwer-Lytton, . . . and such historians as Mackintosh and Sismondi. In 1874 the elderly Morphis, Texas historian, made this statement: "I have often heard Latin, Greek, Spanish, French and German spoken at the camp fire. Many times I have heard apt quotations from Shakespeare, Burns, Byron, Milton, Moore, and others."

The truth is that a vast majority of the early settlers of Texas knew little and cared less about literature and art—in this respect resembling the majority of American citizens of to-day. Yet some of the settlers were readers of cultured taste. All of them were so engaged in winning homes from a wilderness defended by savages and possessed by a foreign country, that they had little time to devote to æsthetic pursuits. Something resembling literature began very early, however, and the growth of literature from colonial days down to the present, both in production and appreciation, has been constant.

It is impossible here to trace the beginnings back to the war songs and myths of the aborigines of Texas, or even back to the compositions that were made by the French and Spanish before the English-speaking settlers arrived. Furthermore, so much of the early writing bearing on Texas was done by men who merely passed through the territory, or who lived in it hardly long enough to become citizens, that it often becomes questionable whether their product should be classed as Texan. In general, however, books pertaining strictly to Texas, no matter by whom written, are here regarded as belonging to the literature of our State.

### THE FIRST BOOK ABOUT TEXAS WRITTEN IN SPANISH

One Spanish book must be noted. About 1530 Nuñez Cabeza de Vaca, the first European to touch Texas soil, wandered across the state. Later he wrote an account of his journey. An excellent and available translation of this eventful work is by Fanny Bandelier, edited by the great scholar Ad. F. A. Bandelier.

The first book of literary presumption claiming Texas as its theme seems to have been a French narrative entitled *L'Héroine du Texas, ou Voyage de Madame . . . aux États-Unis et au Mexique,* by M. G. . .n F. . .n, printed in Paris, 1819. It is a bombastic and romantic chronicle of the unfortunate attempt of a band of exiles from Napoleon's Grand Army to settle at Champ d'Asile on the Trinity River in 1817. The pirate Lafitte comes briefly into the narrative. No English translation of the novel has yet (1928) been printed, but one is announced for early issuance by a Dallas printing and publishing house.

### THE FIRST NOVEL IN ENGLISH WITH SCENE IN TEXAS

The first Texas novel in English was Mexico versus Texas, A Descriptive Novel, "by a Texian," Philadelphia, 1838. The work must have met with a ready response, for four years later it was reprinted in New York under the title of Ambrosio de Lutinez, or the First Texian Novel, Embracing a Description of the Countries Bordering on the Rio Bravo, with Incidents of the War of Independence, by A. T. Myrthe (the pseudonym of Anthony Ganilk). The dedication of the book to "his excellency, Samuel Houston, President of the Republic of Texas," swellingly announces: "Nothing is so well adapted as literature to develop the genius of a new country, and the struggle of Texas against Mexico affords a noble subject for a work of imagination in which the utmost powers of description may be taxed without fear of sinning against probability."

This historical romance is patently modeled on the example set by Sir Walter Scott. The best part of it is laid in Northern Mexico, with the people and geography of which the author was evidently familiar. His descriptions of religious superstitions, of brigandage, and of peon manners in the Sierra Madre are more realistic than are to be found in many Mexican novels. The book contains the best account of the *matachines* dance —a very ancient folk dance still practiced by Mexicans along the Texas border, and revived annually at the Santa Fé Fiesta —that I have ever read. Many of the notes, written in the Scott manner, are enlightening. The love plot is absurd. The work had no influence on subsequent books about Texas, or by Texans; therefore it is interesting mostly from the chronological point of view. Ganilk, the author, signed his name as "Reverend" to a book of poems published in Boston in 1830. Nothing else concerning his life is known.

Francis Berrian, or The Mexican Patriot, by Timothy Flint (1780–1840), is hardly to be classed as a Texas novel; yet Texas has some claim on it, and it was printed twelve years before Ganilk's romance. Published in Boston in 1826, in two volumes, it enjoyed such popularity that in 1834 it was reprinted in three volumes, and there was a London edition as well as a Philadelphia edition.

The Houston Museum of Fine Arts was constructed with funds raised by public subscription and in itself is a work of art. The collections are already creditable and will grow with the years, as the city has many wealthy citizens who wish their home to be an artistic as well as a business centre.

The Witte Memorial Museum, which stands in Brackenridge Park, San Antonio, was partly constructed with funds left by Alfred G. Witte. It is occupied by the San Antonio Art League, the Museum Association and the Conservation Society. All of the societies have interesting collections, some of which are shown on other pages.

Pictures, courtesy Houston Chamber of Commerce and Witte Museum.

Timothy Flint, a native of Massachusetts and a graduate of Harvard, was for years a missionary in the valleys of the Ohio and Mississippi rivers. His novel, Francis Berrian, is of a young man who goes into the western country toward Santa Fé, New Mexico. He rescues a Spanish señorita from the Comanches and goes with her far down into Mexico where he joins the Mexican revolutionists who are fighting for independence from Spain. He goes to San Antonio, Texas, meets some of the daring Americans who were fighting with the revolutionary Mexicans, and of course, in the end he marries the señorita, even though she is a Catholic and he a Protestant. The book does not reveal an intimate knowledge of Spanish or Indian life, but it does treat of a stirring chapter in the early history of Texas.

### TEXAS DRAWS YOUNG MEN SEEKING ADVENTURE

Long before Moses Austin rode into Texas to get permission to settle American colonists in the land, Texas was a lodestar to adventurous souls in the United States, many of them men of education. As the country settled, and tales of its resources and of the conflicts with Indians and Mexicans drifted back into "the States," young men of spirit and imagination turned toward it more and more. Among such was Charles Wilkins Webber, the first important teller of tales that Texas inspired.

He was born in Kentucky, May 29, 1819, his father a physician, his mother a cultured and high-born lady. At the age of nineteen he came to Texas, and served some time with the noted ranger, Captain Jack Hays. After a glut of adventures—to be reflected in his tales—he returned to Kentucky and resumed the study of medicine which his adventuring had interrupted. Soon he was in the Princeton Theological Seminary as a candidate for the ministry. Tiring of such confinement, however, he set out for New York to try his pen. His first night in New York was spent with the naturalist Audubon, who had himself visited Texas and written a description, now famous, of Sam Houston. Audubon advised Webber to study the natural history of South America, and introduced him to William Cullen Bryant. Bryant was instrumental in getting him an engagement to write a series of articles for the New York World on "Texan Adventures." He became associate editor and joint owner of the Whig Review. For a decade he led a busy life, writing critical articles and natural history sketches as well as romantic stories. About 1850 he left New York to make a gold hunting expedition into the Gila River country. His plan was to "outfit" at Corpus Christi on the Texas coast; but hearing that the Comanches had stolen all the horses he had arranged to have awaiting him there, he turned back. On April 11, 1856, he died in Nicaragua, having gone there with the filibuster William Walker.

His chief works are: Old Hicks the Guide (1848), Gold Mines of the Gila (1849), The Hunter Naturalist (1851), Tales of the Southern Border (1853) and Wild Scenes and Song Birds (1854). The last proved worthy of Audubon's patronage. Old Hicks the Guide and Tales of the Southern Border, brave and fluent stories as they are, still read well.

Another writer who made something of a reputation on material garnered in Texas was Alfred W. Arrington (1810–1867). He was born in North Carolina. While yet in his teens he was a Methodist circuit rider in Indiana, Illinois, and perhaps Arkansas; but he became skeptical and withdrew from the pulpit. In 1835, he was admitted to the bar in Missouri. Some time thereafter he came to Texas, where he became judge of the Rio Grande district. He is said to have been a "magnificent orator." His Texas novel, The Rangers and Regulators of the Tanaha, or Life Among the Lawless: A Tale of the Republic of Texas, 1857, came out under the pseudonym of Charles Summerfield. The language and situations of the book are frequently strained, but it reveals fairly well turbulent conditions in Texas immediately following the Revolution. Arrington also wrote Lives and Adventures of the Desperadoes of the Southwest—a book "bold, bloody, and resolute." His Poems, published posthumously, are worthless.

### THE STORY OF THE ADVENTURES OF MUSTANG GRAY

There was a gallant ranger,
They called him Mustang Gray;
When quite a youth he left his home,
Went ranging far away.

He ne'er would sleep within a tent,
No comforts would he know;
But like a brave old Texian,
A-ranging he would go.

# SWIFT ACTION CAUGHT IN STONE

Courtesy, Old Trail Drivers' Memorial Association.

**Model of a monument by Gutzon Borglum for the city of San Antonio, in memory of the services of the old trail drivers and pioneer stockmen in the development of the State.**

Photograph, Jordan Company.

**The Cowboy, a statue by Constance Whitney Warren, presented by the artist to the State in 1925 and placed before the Capitol in Austin on a spot included in the famous old Chisholm Trail.**

Thus runs one of the best of the popular ballads once sung and recited on Texas frontiers. It is likely to keep green for a long time the memory of that strange and desperate character, Mustang Gray; and as long as Mustang Gray is remembered, Jeremiah Clemens (1814–1865) will not be forgotten, for Clemens wrote a very entertaining historical romance called Mustang Gray, Philadelphia, 1857. It is vivid with pictures of pioneer life in Texas, and many actual facts about Mustang Gray are woven into the narrative. Another Texas novel by Clemens is Bernard Lile, 1853. Clemens was an Alabaman. In 1842 he came to Texas as lieutenant-colonel of a company of volunteer riflemen, and he served in the Mexican War.

But the volumes of Clemens, Webber, and all the other writers so far treated have long since disappeared from public circulation and are to be found only in extensive public libraries or among the treasures of rare book collectors. Not so with the multitudinous works of Mayne Reid, whose romances thousands of the older generation of America, as well as of Europe, recall with warmth. The word "adventurer" has acquired something of sinister suggestion; let us say, then, that Mayne Reid was an adventurous gentleman, who adopted a good deal of Texas into his tales.

### THE STORIES OF MAYNE REID ARE STILL READ

He was born in Ireland, 1818. His parents sought to educate him for the Presbyterian ministry, but in 1840 he landed in New Orleans to plunge at once into the life of trappers, buffalo hunters, and Indian warriors up Red River. He tried school teaching in Tennessee and play-acting in Ohio; he did hack writing in New York and Philadelphia. Then in 1846 he secured a lieutenant's commission to fight in the war against Mexico. He led the charge at Chapultepec, was severely wounded, was commended in army dispatches, and then, if we are to credit a Texas tradition, was for a while stationed at Fort Inge on the Leona River near the Texas border. From 1848 until his death in 1883 he was a world citizen and a world traveler.

His first romance, The Rifle Rangers, 1850, grew out of his experiences in Mexico. It was followed in 1851 by Scalp Hunters, the scene of which is laid in Northern Mexico and the Southwest. Hard on it came The Boy Hunters, full of lore concerning the mustang, the buffalo and the eagle. The War Trail: The Hunt of the Wild Horse, 1861, is based on a fine legend of the Pacing White Stallion, and has for its setting the country between the Nueces and Rio Grande. The Headless Horseman, 1863, is another tale of Southwest Texas, and is likewise based on a Texas legend. Many readers account it the best romance that Reid produced; it is a fascinating yarn. Other volumes belonging wholly or in part to Texas literature are The Death Shot, The Lone Ranche: A Tale of the Staked Plain, and Wanita [Juanita], the Beauty of the Hills: A Legend of Texas. Reid was primarily a writer for boys. In a recent book, Mesa, Canyon and Pueblo, Charles F. Lummis says: "A too fluent writer, Mayne Reid was yet a companion whose enthusiasm was contagious and instructive. He had a very rare genius for accurate observation and logical deduction, a rare instinct for the truth, and a genuine love of nature."

Two other seekers of adventure in Texas and of copy for adventurous stories were Karl Postl (1793–1864), a German, generally known by his pen name, Charles Sealsfield, and Gustave Aimard, a Frenchman (1818–1883). Sealsfield was interested in the social life of the border lands, and his Adventures in Texas, known also as The Cabin Book, or Sketches of Life in Texas, gives a mixture of facts and fancies regarding everyday life in Texas during the early thirties. Aimard was confessedly a romanticist. His Freebooters: A Story of the Texan War and various other romances of the Southwest are too unconvincing to be accepted by modern readers; nevertheless, they are lacking neither in imagination nor in interesting glimpses of the Southwestern country.

### THE FIRST BOOK OF VERSE ON TEXAS

So much for the early novelists. We come now to the poets. Hugh Kerr (1795–1843), a visitor from Ireland, is mentioned only because his Poetical Description of Texas and Narrative of Many Interesting Events in that Country, etc., New York, 1838, is the first volume that appears in the mass of Texas verse. A specimen stanza follows:

Gonzales and Victoria
Are towns upon the Guadalupe;
The first is distant from the bay,
The latter some thirty miles up.

Well did an anonymous critic make the following retort:

O, Kerr, Kerr, Kerr, Kerr!
What did you write these poems fer?

Generally, however, there is in the earlier Texas poets a Tennysonian grace and serenity often in sharp contrast to the crudeness of contemporary works of fiction. Generally, too, vapidity and aloofness from reality are dominating characteristics. Mirabeau Buonaparte Lamar (1792–1859), second president of the Republic of Texas and founder of the educational system of Texas, wrote at least one graceful poem that has become a national classic, The Daughter of Mendoza. He was a polished gentleman and orator. When Lamar died, W. T. G. Weaver (1834–1877), author of a collection of verse entitled Hours of Amusement, wrote a fitting poem on the occasion, beginning thus:

The patriot, the bard, and the warrior is dead!
Mourn, Texas! One more of your Nobles has fled!
And the wail of the weepers comes up from afar—
In the bosom of Texas lies gallant Lamar!

### Some of the Patriotic Poems on Texan Heroes

Representative of the patriotic poets—and nearly all of the poets of the period were intensely patriotic—was Reuben M. Potter (1802–1890). His Hymn of the Alamo, first published in the Telegraph and Texas Register, October 4, 1836, and since reprinted many times, remains the most dignified, thoughtful and inspiriting of all poems that have been essayed on a subject of the Texas Revolution. His Old Texian Hunter, commemorative of one of the defenders of the Alamo, has simplicity and sincerity. Potter wrote but little, and his verses were never collected into book form. He wrote various historical essays on events of Texas history. Perhaps his most eloquent sentences were those he provided for inscription on the Alamo monument, constructed in 1841 from the stones of the ancient fort, and destroyed on the occasion of the burning of the state capitol in 1881.

The monument had on it one sentence that alone of all literary productions of Texas—with the possible exception of the letter that Colonel Travis wrote from the Alamo a little while before his death—smacks of immortality. The sentence is: "Thermopylæ had her messenger of defeat—the Alamo had none." These ten words are attributed to General Thomas Jefferson Green, of whom more later. Scores of poems, articles and stories have sought to realize the drama of the Alamo, but only Reuben Potter's Hymn and the sentence carved on the monument he helped design are worth remembering.

One other poet of the period, James T. Lytle, a pioneer Texan, deserves a word. He wrote the famous "Ranger's Song":

Mount! mount! and away o'er the green prairie wide.

There is authority also for crediting him with the brave ballad of "Mustang Gray."

For a full representation of these and other poets of the time the reader is referred to The Poets and Poetry of Texas, 1885, compiled, with biographical sketches, by Sam H. Dixon, who lives in Houston, and to Francis D. Allan's Lone Star Ballads, Galveston, 1874, which is particularly rich in patriotic verse of Texas and the Confederacy. Both volumes, however, long out of print, are now difficult to find.

### Interesting Volumes of Memoirs, Travel and History

Far more vivid, realistic and genuine than either the poetry or romances of Texas, no matter of what period, are the memoirs, travels and histories. His brave and spirited death in the Alamo made David Crockett (1786–1836) a Texan forever, though he had been in Texas, fresh from Tennessee, only a few months when he died. No better exposition of backwoods manhood has ever been written than Crockett's Autobiography. Colonel Crockett's Exploits and Adventures in Texas appeared not long after the fall of the Alamo. It was printed with the statement that the manuscript had been found on the body of a Mexican general killed at San Jacinto. It is now generally printed as a continuation of the Autobiography. Whatever its authorship, it equally holds the interest of the reader and is written in very much the same vigorous style.

The Memoir of Colonel Peter Ellis Bean has had a career almost as enigmatical as was his own. Born in Tennessee in 1782, Bean became perhaps the most vivid adventurer that ever spurred over Texas soil. When he was but eighteen years old he came to Texas with Philip Nolan to trade horses and capture mustangs. How he was captured by the Spanish, how taken to Mexico and kept for years in prisons, how besought by a beautiful Spanish lady, how befriended by a pet lizard in his cell, and then how he became a soldier in the revolutionary Mexican army are all fascinatingly told in his Memoir. The zest of life was strong in him, and the Memoir pulses with vitality and reality. It is as thrilling as Casanova's account of his "Escape from the Leads of Venice." No wonder that some honest folk have doubted the authenticity of it! The question will never be settled. Bean died in 1846. Nine years later Yoakum included the Memoir in his History of Texas, saying that it had been prepared in 1816, but failing to say where or how he had obtained it. It has never been reprinted. It should be made accessible.

### Some stories of life in Mexican prisons

Perhaps it is not too much to say that the prisons of Mexico and the Mexican army inspired the best literature of early-day Texas. As remarkable as Bean's Memoir is the Journal of the Texian Expedition against Mier, by Thomas Jefferson Green, New York, 1845. Green came to Texas from North Carolina in 1836. The causes that brought on the expedition against Mier, Mexico, in 1842, do not belong to this sketch. Green was an officer in the expedition. After the Texans had surrendered to the Mexicans he drew from among the black beans of death a white bean—life. He was imprisoned in Perote, escaped, and wrote the Journal. The book is illustrated with engravings from drawings by Charles McLaughlin, an English lad who had come to Texas and was also a Mier prisoner. It is probably the first Texas book to be illustrated by a Texas artist. Green died in North Carolina in 1864.

William Preston Stapp, a private soldier who took part in the Mier Expedition, wrote a lively account of his imprisonment that should be read in connection with General Green's account. The title of it is The Prisoners of Perote. It was published in Philadelphia, in 1845, and is to-day almost unprocurable. Four or five other Mier survivors left accounts of their intense experiences. Indeed, they had a tale to tell.

Another Texas expedition as ill-fated as that against Mier was the Santa Fé Expedition into New Mexico, 1841. It resulted in what has probably been the most widely read of all thoroughly Texan books—Narrative of the Texas Santa Fé Expedition, in two volumes, New York, 1844, by George W. Kendall (1800–1868). A year after it came out the book was reprinted in London and within eight years' time 40,000 copies of it had been sold. It is in journal form, and much of it originally appeared in the New Orleans Picayune, of which Kendall was founder and associate editor. He went along with the Expedition to get copy, and by the time he had all but perished on the Staked Plains, had walked in front of Mexican guards from Santa Fé to Mexico City, and had lain in the cells of prison, he had copy.

Kendall had a sense of humor, rare powers of observation, and a generous nature. His style is both pictorial and economical, and his narrative deserves to rank along with Dana's Two Years Before the Mast. When with General Taylor he rode triumphantly down the streets of Mexico City only a few years after his imprisonment he must have felt a strange sense of contrast. He spent his last years successfully conducting a sheep ranch near Kerrville, Texas, and concluded his literary career with Letters on Sheep Raising. The Letters are to be found in that serial anthology of Texas facts and curiosities, the Texas Almanac, which has been appearing off and on for three-quarters of a century.

John C. Duval (1819–1897) really belongs to the period following the Civil War, but in nature and subject matter he should be classed among *ante bellum* writers. His father, a Kentucky congressman, and afterward territorial governor of Florida, had led a very adventurous life and was the Ralph Ringwood of Irving's Geoffrey Crayon Papers. John C. Duval at the age of seventeen was with Fannin at the Goliad Massacre and was among the few Texans who escaped. His Early Times in Texas, printed in 1892, tells not only of the

Massacre and of his escape, but of wonderful adventures that followed. It is immensely thrilling, and boys would have a hard time finding any book more interesting than it and its half fictional, half real sequel, The Young Explorers. Just as good is the biography of Big Foot Wallace, one of the most singular and humorous of all Texas frontiersmen, a light-hearted Indian fighter and ranger and also a prisoner of Mier.

Bird, snake, beast of the woods, flower, tree, "folks"—all were interesting to John C. Duval. His early training in the University of Virginia, plus his training on the frontiers of Texas, gave him a highly individualized outlook on life. His only biographer, William Corner, writing in the Quarterly of the Texas State Historical Association, July, 1897, says: "No book of this kind, except Robinson Crusoe, has charmed me so much as Early Times in Texas. . . . Some day this will be a classic, and it will be a joy to every Texas boy's heart."

Of various books of travel two or three only can be noted. The most significant is A Journey through Texas, or A Saddle Trip on the Southwestern Frontier, by Frederick Law Olmsted (1822–1903). The trip was made in 1856, and when the account of it appeared the next year, it, together with his Journey in the Seaboard Slave States, brought Olmsted recognition as being the most observant and essential of all American travelers. Nowhere else can one find such a picture of *ante bellum* life in Texas and the South as Olmsted gives. Olmsted was a Yale man, an engineer, a horticulturist, and a landscape artist. Central, Riverside, and Morningside parks, New York, are of his designing. Boston and other cities sought his plans. In Washington the approach to the capitol from Pennsylvania Avenue was made from his design. He "studied the genius of American scenery." He was a founder of the Metropolitan Museum of Art and of the American Museum of Natural History.

Drawing the black beans at Salado—one of the illustrations by Charles McLaughlin for Green's Journal of the Texian Expedition against Mier.

The northwest part of Texas has developed agriculturally only during the present century, and that part of the state is under deep obligation to Captain Randolph B. Marcy, who first of all Americans explored it. He wrote two entertaining and instructive books on his explorations: Exploration of Red River, 1854, and Thirty Years of Army Life on the Border, 1866.

### Some of the earlier histories of Texas

We come now to a brief consideration of the more or less formal histories of Texas. The first, Texas: Observations, etc., 1833, in the form of letters, was written by Mrs. Mary Austin Holley, cousin of Stephen F. Austin. She followed it three years later with a more connected history. The same year, 1836, David B. Edward, a Scotchman, published a History of Texas. Because of emigration and the possibility of Texas' being made a part of the British Empire, Englishmen were keenly interested in Texas all during the 'forties, and at least three of their number had written histories of Texas before the decade had closed: William Kennedy in 1841 (an excellent history, recently reprinted); N. Doran Maillard in 1842; and Charles Hooton in 1847. The best and fullest history that appeared before the Civil War was that by Henderson Yoakum (1810–1856). He died the year it was issued. More discursive but very valuable is Texas and Texans, 1841, by Henry Stuart Foote (1800–1880).

Even before Texas achieved its independence, there was an organization of Texas Rangers, and in 1847 was published the first of a succession of chronicles that have helped to disseminate knowledge concerning this proud, romantic and efficient corps of men. This book was The Scouting Expeditions of McCulloch's Texas Rangers, by Samuel C. Reid (1818–1897). Reid was himself a ranger, and his book furnishes vivid details about such chieftains as Jack Hays, Ben McCulloch, and Sam Walker.

### Later stories of the Texas Rangers

This seems to be the place to mention other books of the kind, although some of them did not appear until the twentieth century. In Rangers and Pioneers of Texas, San Antonio, 1884, A. J. Sowell (1848–19?), a native Texan, made a noteworthy contribution to the ranger tradition. Sowell had served as a ranger, engaging in several Indian fights. He did a great deal of feature writing on historical subjects for newspapers, and assembled a number of such sketches into a ponderous volume, Early Settlers and Indian Fighters of Southwest Texas. Perhaps not more than two copies of his book on Big Foot Wallace survive. He had an eye for character, he knew the prairies and prickly pear, and he possessed something of the gift of narrative. He had not the rush of action, however, the freshness, and the finish of style evinced by N. A. Jennings in A Texas Ranger, 1899. Early in 1875, with a Philadelphia accent fresh on his young tongue and a lust of adventure rushing the blood through his young heart, Jennings joined Captain L. H. McNelly's famous company of rangers. After getting enough action to fill one of the most fascinating books ever written on the Southwest, he became a newspaper man.

In 1909 Albert Bigelow Paine, best known as the biographer of Mark Twain, brought out a life of Captain Bill McDonald, Texas ranger. Then, in 1921, James B. Gillett, born in 1856, a frontiersman and ex-ranger known all over West Texas, privately printed his Six Years with the Texas Rangers. It proved to be so readable and such good history that the Yale University Press reissued it and the World Book Company put a slightly simplified form of it into the Pioneer Life Series. "Captain" Gillett has seen a great deal of life with clear and steady eyes; his direct and entertaining narrative should be read by every boy who wants to know about rangers and the old frontier.

## II. SINCE THE CIVIL WAR

Although the population of Texas had increased from 50,000 in 1836, the year in which Texas won independence from Mexico, to more than 600,000 in 1860, on the eve of the Civil War, and although this war cost Texas the lives of tens of thousands of men as against the lives of only some hundreds of men lost in the struggle with Mexico, the result in literature was almost nothing. The causes are not far to seek. The Civil War did not draw to Texas daring, high-spirited, intense-living, imaginative men, all hungry for experience and capable of profound sensations, as did the war of the Texas Revolution; the Civil War drained Texas. Again, the issue was not so momentous, although fighting and feeling were as fierce. Finally, Texas was no longer an independent unit, a nation among nations, but a state among other states—a subsidiary. Literature springs from a sense of individuality.

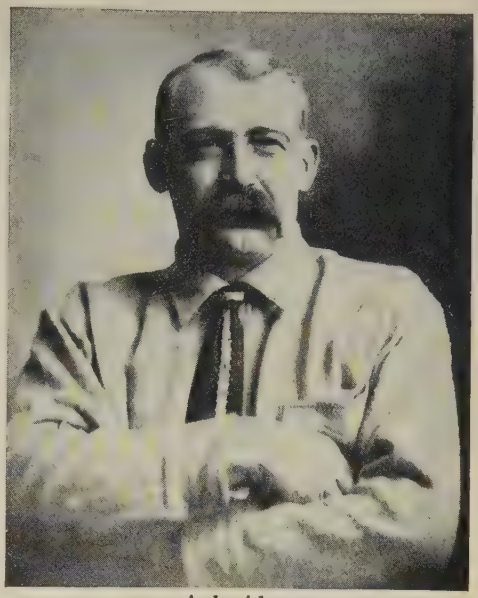
Had Texas remained a republic there is little doubt that her economic and educational progress would have been much slower; at the same time there is little doubt that she would have retained to a more marked degree her individual characteristics, and that therefore her progress in literature and art would have been more distinct.

The three outstanding industries that have developed in Texas since the Civil War are cattle, cotton and oil. Of oil nothing has been written worthy of record. Of cotton and plantation life we shall speak presently. Cowboys and cattle trails have beyond all doubt inspired the best books of Texas literature during the past fifty years.

### Some of the Many Stories of Cowboy Life

In 1886 Charles A. Siringo, born in 1855, the most representative cowboy of America who has made himself audible, wrote his Texas Cowboy, or Fifteen Years on the Hurricane Deck of a Spanish Pony. Its sale ran into the hundreds of thousands—but it appeared only in the paper-back form handled by "news butchers" on trains. When the copyright ran out Siringo rewrote it as The Cowboy Detective. Meanwhile he had written The Life of Billy the Kid and other Western material. In 1927 he combined and recast all his "far-stretched" experiences into Riata and Spurs, which is published in Boston in beautiful format, and is now available to all the world. Rollicky, realistic, swift, humorous, dramatic, packed with information about cattle, trails and cattle people, it is likely to be read as long as the world has any interest in cowboys. It is a wholesome book and boys read it eagerly.

Charles A. Siringo.

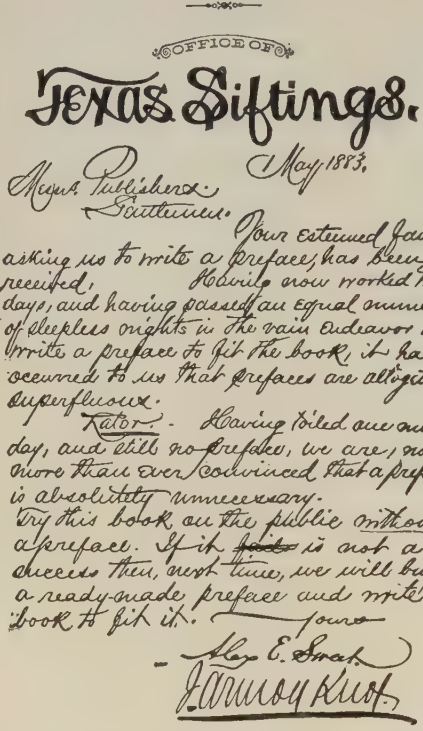


Andy Adams.

The classic writer of cowboy life is Andy Adams. Born in Indiana in 1860, he came to Texas "a cowboy for to be," a decade before the great trails to Kansas and beyond were closed forever. He drove the trail as one of the hands, and traded horses with the "big augers." He lived on the range very much as Conrad lived on the sea, not as a writer, but as a man of the element. Then for ten years or so he lived the life of prospector and miner in the Rocky Mountains. When he began writing he was mellow and seasoned with the spirit of the vanishing West. His first book, The Log of a Cowboy (1903), is perhaps his best. It is the story of a trail herd that is received on the Rio Grande and is delivered two thousand miles to the northwest at the Blackfoot Indian agency in Montana. Confessedly fiction, it is at the same time so true to life that it will be impossible for any other book on trail life to supplant it—the best piece of fiction ever written around cows and cow people. As in all of Adams's books, the style is honest, easy and simple. It is a superb book for boys.

Yet Wells Brothers, written for boys, is as a boys' book almost an equal. Other Andy Adams books are A Texas Matchmaker; The Outlet; Cattle Brands; Reed Anthony, Cowman; and The Ranch on the Beaver. Mr. Adams lives in Colorado Springs, Colorado.

NOT A PREFACE.



OFFICE OF

Texas Siftings.

May 1883.

Messrs. Publishers:

Gentlemen. Your esteemed favor asking us to write a preface, has been received. Having now worked two days, and having passed an equal number of sleepless nights in the vain endeavor to write a preface to fit the book, it has occurred to us that prefaces are altogether superfluous.

Later. Having toiled one more day, and still no preface, we are more than ever convinced that a preface is absolutely unnecessary.

Try this book on the public without a preface. If it is not a success then, next time, we will buy a ready-made preface and write a book to fit it.

Yours

Alex E. Sweet

J. Armoy Knox

Reduced facsimile of the introductory page from Sweet and Knox's On a Mexican Mustang through Texas.

North of 36, by Emerson Hough, is another novel of the Texas Trail worth reading. Many other writers, such as Zane Grey and William Macleod Raine, have professed to weave fiction about Texas cowboys, but as interpretations of the authentic cowboy their books are worthless.

Aside from Siringo's there are several excellent chronicles of cowboy experiences. The Trail Drivers of Texas, 1926, is a compilation of reminiscences from scores of the old trail men, many of the sketches written years ago by the trail-blazers. Frank Hastings (1860–1922) was manager of the great S M S Ranch on the South Plains, and his A Ranchman's Recollections, 1921, has among other good things the best story that has been written about a race between cow horses. Fifty Years on the Old Frontier, by James H. Cook, is well written and is faithful to early-day ranch life in South Texas. Edgar Rye's Quirt and Spur, 1909, mingles cows and buffaloes. Crude, but interesting and informing, are the autobiographic records of two Texas cowboys who became circuit riders: From the Plains to the Pulpit, by J. W. Anderson, and Cowboy Life in Texas, or Twenty-seven Years a Maverick, by W. S. James.

The Cowboy and His Interpreters, 1926, by E. Douglas Branch, a young Texan, seeks to evaluate some of the material that has been written about cowboys. It is provided with a bibliography of cowboy literature.

### The First Collection of Cowboy Songs

Some twenty years ago Harvard University granted a fellowship to a graduate student from Texas named John A. Lomax, that he might collect cowboy songs and ballads. His collection, Cowboy Songs and Other Frontier Ballads, 1910, introduced to the reading public the most original contribution, aside from Negro spirituals, that America has made to folk balladry. Mr. Lomax has sung these songs and lectured about them all over the United States. His collection was, in 1927, supplemented by many songs and ballads printed in Texas and Southwestern Lore, a book edited by the present writer and issued by the Texas Folk-Lore Society. Two Texas musicians, Oscar J. Fox and David Guion, are nationally known for their arrangements of some of the cowboy songs.

"Larry" (William Lawrence) Chittenden, of New Jersey birth and of some years' experience on a Texas ranch, belongs in the group of cowboy writers, for ever since the publication of his Ranch Verses in 1893 he has been known as "the poet-ranchman of Texas." The Cowboys' Christmas Ball seems destined to become a permanent contribution to the literature of Texas.

### Books of Travel in Texas Are Still Written

Travel in Texas long since ceased to be a novelty; but two travel books of the last half century still make good reading. In the seventies Colonel N. A. Taylor of Houston made a horseback trip over Western Texas. The result was a book, The Coming Empire, or Two Thousand Miles in Texas on Horseback, 1877. It appeared under the names of both H. F. McDanield and N. A. Taylor, but all that McDanield did was to help finance the book. It supplies a kind of supplement to Olmsted's observations of the fifties.

Times have changed since then. Now if a young man, who may never have visited San Antonio before, undertakes to shoot at the lamps, or indulges in any eccentricities of that character, he finds himself very much bewildered. Instead of creating admiration and awe, and being spoken of as a candidate for sheriff, as formerly, he immediately becomes such an object of pity that the spectators feel like taking up a collection for him. He is pulled off his horse and thrown down on the pavement by a couple of policemen. His pistol is ruthlessly taken away from him; and, while

**Reduced facsimile of a half-page of On a Mexican Mustang through Texas**

The second travel book, On a Mexican Mustang through Texas, 1883, was largely written by Alex. E. Sweet (1849–1901), though the name of J. Armoy Knox appears as joint author. Both were newspaper men, but Sweet was much more. He was a humorist and cartoonist of unusual powers. Their weekly newspaper, Texas Siftings, which began publication at Austin in 1881, won international recognition on account of its spontaneous humor and its clever and amusing cartoons.

**J. Armoy Knox.**

Another Texas periodical of the time that attracted wide attention was The Iconoclast, edited by the vigorous and bellicose W. C. Brann (1855–1898).

### THE FIRST PROFESSIONAL AUTHOR WHO LIVED IN TEXAS

Texas is peculiar in that it is not only Western but also Southern. It has produced at least one worthy literary representative of old-time plantation life—Mollie E. Moore Davis. She was born in Alabama in 1852, was reared in Texas, and died in New Orleans, 1909. She began by writing poetry, her first poem to be printed appearing in the Tyler, Texas, Reporter when she was but fourteen years old. About 1868 a collection of her verse entitled Minding the Gap

**Mrs. Mollie E. Moore Davis.**

was printed in Houston. In 1874 she married Major T. E. Davis, who later became editor of the New Orleans Picayune. Although she spent her best writing years in the French quarter of New Orleans, the prairies of Texas, the adventure that "Texas border" connotes, and the plantation life down the Brazos River called to her as long as she lived. She belongs to the "local color" school. A compelling example of her power in depicting negro character and in telling a good story is illustrated by "The Love-Stranche" in An Elephant's Track and Other Stories. Her two novels that best express the Texas life she knew are Under the Man-Fig, 1895, and The Wire-Cutters, 1899.

### ONE OF AMERICA'S FOREMOST STORY-TELLERS CONNECTED WITH TEXAS

Mollie E. Moore Davis was the first *professional* writer of consequence to grow out of Texas. Sydney Porter, better known as O. Henry, learned to write in Texas, and, as not only a national but an international figure, he easily overtops all other writers that Texas has had a hand in producing. He was born in Greensboro, North Carolina, September 11, 1862. Twenty years later, after having gone to school for a while and clerked in a drug store, he came to Texas. For two years he "ran wild" on a ranch in La Salle County—still a ranch country,—herding sheep, riding with the cowboys,

Courtesy Doubleday, Doran & Co.
O. Henry.

talking a great deal with "Red" Hall, one of the best rangers that ever ranged on the Texas borders, studying Mexicans, and getting the tang of old-time range men. Then he came to Austin, where over a period of ten years he kept books for a real estate firm, worked in the State Land Office as draftsman, acted as cashier in a bank, drew cartoons, started a humorous paper called Rolling Stones, hunted for buried treasure, serenaded the ladies, and married. In 1895 he began his famous column in the Houston Post. Meantime he had been practicing writing short stories and had sold some humorous squibs. In 1896 he was indicted in Travis County on the charge of having embezzled funds from the Austin bank. He started from Houston to Austin to stand trial. Had he gone on he would probably have been cleared, for he seems to have been innocent. But instead of proceeding to Austin, when he got to Hempstead junction he turned back east for New Orleans and from there went to South America. After wandering for more than a year, he returned to Texas to stand trial, drawn by love of his wife and little girl. He was convicted and sent to the federal penitentiary at Columbus, Ohio. During three years of imprisonment he did some of his best writing. From the time of his liberation in 1901 to his death in 1910, he lived for the most part in New York, where he was respected and loved by all who knew him, and where there was a far greater demand for his stories than he could supply. Behind the whimsicality, humor and immense humanity of his stories, he stands a tragic, though not a strong-willed, figure.

O. Henry is essentially the representative of the "Four Million." He drew inspiration from streets and population; but in many of his stories Texas is the setting, notably in the collection of stories entitled Heart of the West. He wrote of Texas cowboys, rangers, ranch girls, outlaws, sheep herders. He wrote of old San Antonio, of the chaparral, and of the State Land Office. His Texas years were the years of fundamental practice in writing. During them he stored away impressions of life that dominated his subsequent career.

As soon as Texans who write are on the eve of "arriving," they generally go to New York to live. George Patullo, who was born in Canada, but who roved over Texas ranches and who lived in Dallas while he wrote some of his best short stories, is now living in New York. His Sheriff of Badger, 1912, is a fair novel. Chester Crowell and Owen P. White are Texas reared men now succeeding as magazine writers in New York. Mr. White's two historical books, Out of the Desert and Them Was the Days, are pungent with the flavor of the trans-Pecos country. Abbie Graham, author of two books of personal essays and a biography of Grace Dodge, lives and writes in New York. Emory Holloway, who graduated from the University of Texas and later taught in it, now Professor of English in Adelphi College,

# McARDLE'S PAINTING OF THE BATTLE OF SAN JACINTO

Photograph by Jordan Company, from a painting by H. A. McArdle.

The artist spent thirty years studying for this picture and painting it and its companion, Dawn at the Alamo, both of which hang in the Capitol. Houston attacked April 21, 1836, and within a short time the Mexican army was routed. Many of the faces are portraits, and arms and uniforms are believed to be correct.

Brooklyn, New York, won, in 1926, the Pulitzer Prize for the best American biography. It is of Walt Whitman, whose works Mr. Holloway has also edited.

Barry Benefield, a native of East Texas and a graduate of the University of Texas, has given up his journalistic work in New York in order to devote his time to fiction. His novels, The Chicken Wagon Family and Bugles in the Night, and his collection of short stories, Short Turns, are meeting with the success their naturalness and sincerity deserve.

Stark Young, a native of Mississippi and a resident of New York, is a Texan by virtue of ten years of teaching in the University of Texas (1907–1917). He is the author of various books of verse, plays, fiction and essays, and he is one of the best known dramatic critics of New York. The influence of Texas on his writing has been slight.

Two other writers on whom Texas has a kind of claim, on account of their sojourn at the University of Texas, are Albert E. Trombly (The Springtime of Love and other volumes of verse), now a professor in the University of Missouri, and Howard Mumford Jones, poet and critic, now at the University of North Carolina.

It was certainly not to write books that Colonel E. M. House, the "silent power," the maker of governors and cabinets, the enigma of the War, left Texas. Nevertheless, The Intimate Papers of Colonel House, four volumes, 1926 and 1928, have provoked as much discussion as any piece of writing reflective of the Wilson administration. Colonel House was born in Houston; he now lives in New York.

### Other Texan authors now living elsewhere

Dorothy Scarborough, who teaches a course in the short story at Columbia University, is coming more and more to be regarded as a novelist; but her literary output has been various. She began in 1912 with a book of poems, Fugitive Verses. Seven years later she brought out a volume of informal essays, From a Southern Porch. In 1925 she made a notable contribution to negro folk-lore, On the Trail of Negro Folk Songs. In the Land of Cotton, The Wind, and Impatient Griselda are her three published novels. They show increasing power, insight into human nature, and mastery of narrative technique. Miss Scarborough was born in Texas. She graduated from Baylor University at Waco, and for several years taught in that institution. She has been president of the Texas Folk-Lore Society.

Of lower rank as a novelist is Ruth Cross, another Texas woman gone North. Her best known book is The Golden Cocoon.

John W. Thomasson, Jr., has taken his place in America as an exponent of the World War. His Fix Bayonets, illustrated with his own sketches, shows that not all the glory of warfare has vanished and that not all the men who fought in the World War were pacifists. His latest collection of war stories is Red Pants. Mr. Thomasson was born at Huntsville, Texas, and was educated at Southwestern University, Georgetown. He is still with the United States Marines, a company of whom he commanded in the War.

Dora Neill Raymond, of Sweet Briar College, Virginia, and Hyder E. Rollins, of Harvard University, are two Texans who have won recognition as literary historians, Mrs. Raymond for The Political Career of Lord Byron, and Mr. Rollins for his editorship of various books of English ballads and broadsides.

### Some of the more important works on history and biography

The best biographical work that has ever come out of Texas appeared in 1925, The Life of Stephen F. Austin, by Eugene C. Barker, Professor of History in the University of Texas and a native Texan. Professor Barker has for years been editor of the Quarterly published by the Texas State Historical Association; his studies in Texas history run into the thousands of pages. He is recognized as one of the leading historians of America.

A contemporary of his and, at one time, an associate in the University of Texas is Herbert E. Bolton of the University of California. He has contributed much readable and scholarly history bearing on Texas, notably Texas in the Middle Eighteenth Century, 1915.

The handiest modern history of Texas is that by George P. Garrison (1853–1910). But H. H. Bancroft's powerful History of the North Mexican States and Texas, 1884, 1889, can hardly be superseded. John Henry Brown, author of Encyclopedia of the New West, Indian Wars and Pioneers of Texas, and History of Texas, wrote with passion and prej-

udice; his works, though frequently misleading, are readable. J. W. Wilbarger's Indian Depredations in Texas, 1886, which O. Henry is supposed to have illustrated, is a book of painful and absorbing interest. Duncan Aikman, a newspaper man of El Paso, and compiler of Taming the Frontier, 1925, has in Calamity Jane, 1927, written of a notorious frontier character.

J. Fred Rippy of Duke University, a Texan, and Charles W. Hackett of the University of Texas, a native of Texas, are outstanding authorities on Spanish-American history, and their work fills many volumes. Frank Burr Marsh, University of Texas, is the author of a History of the Founding of the Roman Empire, which the Oxford Press has recently printed. Walter Prescott Webb, of the University of Texas, a native Texan, is growing in power as an interpreter of the Plains, Texas Rangers and other subjects of frontier history. The Texas list of historians could easily be very considerably extended.

This is the place to mention two works that stand unique in their respective places. One is A Texas Scrap Book, 1875, by D. W. C. Baker, now very scarce. The other is The Creative Arts in Texas: A Handbook of Biography, 1926, by Goldie Capers Smith. Nowhere else can so much information concerning living Texans who are contributing to the causes of civilization be found as in The Creative Arts in Texas. It is unfortunate that A Bibliography of Texas, by C. W. Raines, 1896, is no longer available. It is an excellent work of its kind, and has been constantly referred to by the writer in preparing this sketch.

### Famous orators who have swayed the people

It may not be amiss to say something of oratory in Texas. Lamar has already been mentioned as a finished orator. Perhaps Sam Houston was as ready, fiery and effective as any public speaker that Texas can claim. Houston had an immense belief in himself and an uncanny knowledge of the vulnerable parts of his opponent. Governor Jim Hogg, Senator John H. Reagan, and Judge A. W. Terrell were all effective orators. Their orations are for the most part to be found in state papers. Though perhaps not so important as formerly, oratory is still a factor in gaining political prominence.

### The development of interest in poetry

Texas poetry during the last twenty years has shown remarkable quickening. What was written between the Civil War and the opening of the twentieth century requires, with the exception of the work of John P. Sjolander, little consideration. The progress of Texas poetry is best exhibited in Voices of the Southwest, A Book of Texas Verse, 1923, compiled and edited by Hilton R. Greer of Dallas. This is an excellent anthology.

Mr. Greer is president of the very active Texas Poetry Society and is the author of three volumes of poetry, the latest A Prairie Prayer and Other Poems, 1912. The most widely known of Texas poets writing to-day is Karle Wilson Baker, at present a teacher of English in the Stephen F. Austin State Teachers' College at Nacogdoches. Her work appearing in many of the best American magazines has been collected into Blue Smoke, 1919, and The Burning Bush, 1922.

Among other Texas poets who have received recognition are Stanley E. Babb, Grace Noll Crowell and Whitney Montgomery. Mr. Babb, who edits the Literary Page of the Galveston News, has made the sea his chief theme. The title of his volume is The Death of a Buccaneer and Other Poems. Mrs. Crowell, Dallas, is the poet of sentiment and of simple things. Her two volumes of collected verse are entitled White Fire and Silver in the Sun. Whitney Montgomery is the rural poet of Texas. His Corn Silks and Cotton Blossoms, 1928, represents the creations of many years.

John P. Sjolander is one of the pioneers of Texas literature. Born in Sweden in 1851 and educated in the University of Dublin, he came to Texas in 1871. For over fifty years he has been writing poetry, often in ballad form, about seamen, ships, and other Gulf coast themes.

Two Texans have become widely known as newspaper poets: Harry Lee Marriner (1872–1915), known as "The News Staff Poet" of the Dallas and Galveston News; and Judd Mortimer Lewis (1867– ), who has written almost daily for the Houston newspapers since 1900. The verse of Leonard Doughty, a Texas lawyer (1865– ), has not been collected into a volume, but Mr. Doughty is known as a poet and translator of Heine even outside of Texas.

The playhouse of the Little Theatre of Dallas, opened in 1928, has a stage 70 feet wide. There is ample basement space for building and storing the scenery, which is lifted to the stage on elevators.

We come now to a movement in Texas literature that has during the past few years shown phenomenal growth—the Little Theatre movement. One important beginning of the movement was the organization of the Curtain Club by Stark Young at the University of Texas in 1909. In 1923 Oliver Hinsdell came to Dallas to take charge of the Little Theatre there. He has built a beautiful playhouse and for three years handrunning (1924–1926) the players under his direction won the Belasco Cup offered in the national tournament held in New York. Mr. Hinsdell is the author of Making the Little Theater Pay. He has inaugurated an annual state tournament for the various Little Theatres of Texas. There are twenty-eight in the state at the present time (1928).

All three plays that the Little Theatre of Dallas carried to New York have been native folk plays of the South. The first, Judge Lynch, was written by John W. Rogers of Dallas; other plays of his are Bumblepuppy and Wedding Presents. Eugene Pillot of Houston has published Two Crooks and a Lady and My Lady Dreams. Mary Matlock Griffith, Austin, is the author of a series of dramatic episodes in Texas history entitled Westward the Course of Empire.

### Evident signs of intellectual awakening

In all parts of the state there are signs of intellectual awakening. Colleges are arising, art leagues, literary clubs, historical and scientific associations, theatre groups are becoming so numerous and active that they can hardly be kept up with. The Southwest Review, Dallas, is becoming more and more the critical and literary spokesman of the Southwest. Bunker's Monthly, Fort Worth, begun in January, 1928, has already gone far beyond previous abortive efforts to establish "a Texas magazine." Frontier Times, of Bandera, is a popular magazine of history different from anything else in America. John H. McGinnis, as literary editor of the Dallas News, has set an example in book review pages for newspapers that the editors of Sunday editions all over the state are seeking to emulate. Holland's Magazine, Dallas, is an illustrated monthly doing much to aid rural architecture, civic improvements and art in the Southwest.

The Dallas News is one of the most potent civilizing agencies in Texas. It was established in 1885 by Colonel A. H. Belo (1839–1901), who at that time had been connected with the Galveston News for twenty years, and had owned it for ten years. The two papers were run under the same management until quite recently. Colonel Belo early proposed "a devotion to the economic development of Texas *that there might be cultural development.*" He had vision. His press has constantly shown a sense of proportion and intelligence.

## III. THE FINE ARTS IN TEXAS

The story goes that while the unknown artisan was yet carving on the great door to LaSalle's fort, Fort St. Louis, on Lavaca Bay, the Indians smote him down. Art is especially slow where scalping is in style. What civilized man painted the first picture in Texas will probably never be known.

Certainly, however, two German artists, who came to Texas about 1850 and settled near Fredericksburg, a German town, were among the pioneer painters. They were brothers-in-law, and their names were Herman Lungkwitz and Richard Petri. Lungkwitz (1813–1891), the leader, found little demand for art among the hard-working and meagre-living folk of the frontier; so, after trying farming with oxen, he took up photography. He was altogether a landscape painter, and he painted with charm and sympathy the "hill country" about Fredericksburg. Petri painted Indians with fidelity and minuteness; he died when only thirty-six years old. Some public museum in Texas should certainly acquire representative pictures made by these two early artists.[1]

### Two of the earliest historical painters

The first well known Texas artist was H. A. McArdle (1842–1908). It is the fashion nowadays for Easterners who view his ample canvases hung in the House of Representatives of the State Capitol, and for clever connoisseurs to sneer at them. Indeed, his technique is crude, but his name is likely to be cherished by plain Texas citizens as long as his colors endure. He was a historical painter. Hundreds of thousands of Texans have looked at his Battle of San Jacinto and Dawn of the Alamo and felt the exaltation of patriotism. C. W. Raines, the bibliographer of Texas, said of The Battle of San Jacinto, that it "is almost worth a Texan's life to see it." So anxious was McArdle to get the historical details correct that he spent seven years in study and painting to complete the picture. He also painted such well known Texans as "Old Ben" Milam, Deaf Smith and Reuben M. Potter, author of Hymn of the Alamo.

[1] For information regarding these little known pioneer artists the writer is indebted to Mr. Samuel E. Gideon, Professor of Architecture in the University of Texas.

McArdle was born in Ireland, and at the age of fourteen came to the United States. He had already studied under a French artist at Belfast, before he emigrated. In America, he distinguished himself at the Maryland Academy of Design. During the Civil War he served in the Confederate Army. In 1868 he came to Texas and remained here until he died. His picture of Lee at the Wilderness moved Jefferson Davis to tears. It was lost in the fire of the State Capitol, 1881.

Contemporary with McArdle was William H. Huddle (1847–1892). He was a Virginian by birth, served in the Confederate Army, and in 1866 came to Paris, Texas, where he worked at the gunsmith's trade for several years, painting during leisure hours. Then he spent five or six years studying in New York and abroad. His most famous pictures, preserved in the state capitol, are Surrender of Santa Anna and portraits of Houston, Davy Crockett, and various governors of Texas.

### Beginning of modern painting—the onderdonks

Bridging the gap between these two historical painters and the active and numerous school of modern Texas artists, comes R. J. Onderdonk of San Antonio (1852–1917). His fame rests largely on pictures of still life, Texas landscapes and some portraits. He thought that the bluebonnet, which his son Julian made famous to the world, was "too blue" for painting. He was a quiet and sincere artist, never a dabbler, and demand for his canvases is constantly increasing. Some critics are inclined to regard him almost as a peer of his distinguished son.

Julian Onderdonk (1882–1922) is the outstanding Texas name in the art world. He was Texas born and, although a man of the world and a student under cosmopolitan masters, had roots deep in the soil of his native state. "Dusty roads beneath fulsome sunshine, in late afternoon, or at twilight; the blooming cactus and hillsides of blue lupin (the bluebonnet, state flower); the rolling Gulf clouds; the aged live oaks so full of character; the headwaters of Texas streams, where he found the colors wonderful in varying lights; the brush country in winter—these were the things he loved as a true Texan and longed to put on canvas."

# A GIFTED PAINTER OF PORTRAITS, LANDSCAPES AND STILL LIFE

FILLING THE VASES

SAN JOSÉ MISSION

Here are shown two examples of the art of R. J. Onderdonk, who, a master painter himself, inspired others with an interest in art.

# A GREAT TEXAN PAINTER

A MEXICAN JACAL

CLOUDS

Both these paintings are by Julian Onderdonk, whose poetic canvases have immortalized the color and atmosphere of Texas landscape.

Ranch Life, Western Texas, by Henry G. Keller, a prize-winning canvas in the competition of the San Antonio Art League for 1928.

He was a steady worker and he did put many of these things on canvas. He was a man of modesty and spirituality. He was a great artist, and when he died at the age of forty he was but entering upon his career. Dawn in the Hills, considered by many his masterpiece, is breath-taking in its loveliness. After the artist's death it was hung on the line with the Academicians at the National Academy Exhibition in New York, and it will undoubtedly become the property of his native city.

### OTHER ARTISTS WHO HAVE PAINTED TEXAS LIFE

As San Antonio claims the masterpieces of the Onderdonks, it also claims the *chef-d'œuvre* of another Texas artist, though he is of a much lower rank, James Ferdinand McCann (1869–1925). He came from Ireland. His Monarch of the Golden West, a picture of a mighty eagle, which hangs in the Municipal Auditorium, is a bold and beautiful piece of work. The great King Ranch home near Kingsville possesses several McCann pictures representing various forms of nature in Southwest Texas. He was largely self-taught; hence academicians patronize him.

Frank Reaugh, often called "dean of Texas artists," has an international reputation. He was born in Illinois in 1860 and, at the age of fifteen, came to live on a Texas ranch. He studied in St. Louis and in France, and, in 1890, settled in Dallas, where he has made his home ever since. The city has a Reaugh Art Club, and some of his pupils, notably E. G. Eisenlohr, Reveau Bassett and Margaret Ann Scruggs, have already gained recognition. His studies of Texas ranch life and of Texas longhorn cattle will be valued more and more as time goes on. Some of his best known paintings are The Round-up, Watering the Herd, The Maverick, Prairie Sunrise, and Brushy Bottom.

Something has happened, something is happening, to and for art in Texas. In Whistler's words, "Art is upon the town." Artists about San Antonio, Dallas, and other centres are becoming "as thick as blossoms in Paradise." Blue bonnet pictures are offered to tourists by drug stores as promiscuously as Indian pots are offered by the Harvey Houses of New Mexico. Really three things have hap-

Watering the Herd, by the "dean of Texas artists," Frank Reaugh.

pened. One is the advent of civilized taste, which means hunger for art. (Savages often feel this hunger more acutely than the prosperous civilians of enlightened countries feel it.) A second thing, not so good, is the commercialization of the bluebonnet in pictures. The third thing, a most extraordinary thing, is Edgar B. Davis, multi-millionaire oil man.

### THE SAN ANTONIO ART LEAGUE CONTESTS

In 1927 this gentleman offered, through the San Antonio Art League, cash prizes of $6,000 for the best pictures of Texas wild flowers. In 1928 the contest was repeated with cash prizes aggregating $15,000, to be distributed in five classes: (1) for pictures of Texas wild flowers painted by anyone; (2) for pictures of Texas ranch life; (3) for pictures of Texas cotton fields; (4) for pictures of Texas wild flowers painted only by artists resident in Texas; (5) for pictures of all classes receiving honorable mention. There were six hundred entrants in this contest. Prizes aggregating $35,000 have been offered for 1929. The San Antonio Art League Contest has become the greatest contest of its kind in America. The exhibit is held annually in the beautiful Witte Museum.

Herd on the Brazos, by Frank Reaugh.

**Sunny Afternoon, by Lawson Blackmon of San Antonio, a prize-winning picture of the group, Texas Cotton Fields, in the San Antonio Art League Competition of 1928.**

Volume frontispiece and pictures on this and page 286, by courtesy of the San Antonio Art League.

It remains now to name some of the Texas artists whose exhibits in this contest and elsewhere have won them national and international recognition. Two San Antonio artists have long been widely known. José Arpa, a Spaniard by birth, was represented by four canvases in the Spanish exhibit at the World's Fair in 1923. His coloring has great energy and boldness. Dawson Dawson-Watson, a native of England, with a picture of Texas cacti entitled Glory of the Morning, won the $5,000 prize in the San Antonio Art League Contest of 1927. Other San Antonio artists of note are Rolla S. Taylor and Lawson Blackmon, whose prize-winning Sunny Afternoon is shown on this page.

Mrs. E. Richardson Cherry, of Houston, who has lived in Texas for thirty years or more, is ranked among national artists. She has exhibited in the Paris Salon and in New York, Chicago, St. Louis, and other metropolitan galleries. Her colors are marked by sensitiveness and her themes are various. James Chillman, Jr., Director of the Houston Museum of Fine Arts, is regarded as the foremost art director of Texas. The museum under his charge is making great progress. Boyer Gonzales was born in Houston, but he now lives in Galveston.

### Other Texas Artists who have won Recognition

No sketch of art in Texas would be complete without recognition of Mary Bonner of San Antonio, who as late as 1923 "knew nothing of etching." In 1925 her etchings were admitted to the two Salons de la Société des Artistes Français

—and for the first time in history an American woman exhibiting in them won Honorable Mention. In 1926 she won a bronze medal, and both the Luxembourg Galleries and the British Museum acquired specimens of her work, the Luxembourg acquiring a water color. She is exceedingly versatile, but her etchings of cowboys seem to be attracting the widest attention.

Among Dallas artists E. G. Eisenlohr is becoming almost as widely known as Frank Reaugh. He has exhibited in the National Academy of New York, at the Pan-American Exposition, and in many other notable exhibits. Some of the other Dallas artists are Jessie Jo Eckford, Alexander Hogue, Martha Simpkins, Franz Strahalm and Katheryne Hail Travis.

Fort Worth, like San Antonio, Houston and Dallas, has an art museum. The city's most representative artist, perhaps, is Samuel P. Ziegler, head of the Department of Art in Texas Christian University. Teachers of art in the University of Texas, and interesting painters both, are Samuel E. Gideon and Raymond

RODEO

MAP OF THE WORLD

THE BULL

This series of etchings by Mary Bonner discloses some reasons for the notable recognition given her in Europe and at home. Her clever frieze of cowboys and their mounts humorously reflects ancient Mediterranean art. The borders of bats and rattlesnakes, geese, horned toads and other Texan wild life show a gift of creative fancy. Her work is dashing and original but technically sure and able.

Photographs, Roseman, courtesy of the Witte Memorial Museum.

Photograph, Jordan Company.

ELISABET NEY

Everett. Many Texans never heard of the little town of Holland, but Ella K. Mewhinney of that place is winning fame. Her painting, Shadows, was given honorable mention in the San Antonio Art League Contest, 1928. Audley Dean Nicols, of El Paso, has painted the flora of the western part of the state with fidelity and beauty. For the frontispiece of our volume, we have made a reproduction of his beautiful canvas, Texas Plains, for which he was awarded a prize in the competition of 1928.

Erwin E. Smith of Bonham, Texas, has done something with cowboys that is almost unique. He is a sculptor and a photographer. With him photography is a fine art; and he has spent years on the big ranches of Texas and New Mexico, taking thousands of pictures of cowboys in every conceivable pose. His photographs, many of which have appeared in American magazines, depict almost all the phases of ranch life.

### SCULPTURE HAS FEWER DISCIPLES THAN PAINTING

Sculpturing in Texas began with Elisabet Ney (1834–1907). She was born in Germany and, before she emigrated to America in 1870, had won the approbation of the great Schopenhauer and had made a statue of King Ludwig II of Bavaria. She settled with her husband on a plantation near Hempstead, Texas, and for years produced little. Then she was commissioned by the state of Texas to make statues of Stephen F. Austin and Sam Houston for the World's Fair at Chicago, 1893. The statues are insipid and characterless, but Elisabet Ney made her studio in Austin, whither she had moved, something of a nucleus for Texas art. She executed a striking figure for General Albert Sidney Johnston's tomb. Her Lady Macbeth, in the National Museum at Washington, has with justice been highly praised. Her studio, known as the Ney Museum, is now under the direction of the Texas Fine Arts Association and is open to the public. Mrs. Bride Neill Taylor, of Austin, has written an excellent biography, Elisabet Ney, Sculptor.

Bonnie MacLeary, who was born and reared in San Antonio, has a studio in New York. Her lovely figure of Aspiration has been placed in the New York Metropolitan Museum of Art.

Two sculptors of Italian origin, Enrico F. Cerrachio and Pompeo Coppini, are Texans by adoption. The equestrian statue of Sam Houston, unveiled two or three years ago by Cerrachio, in Houston, excited furious debate. He has made various other patriotic statues. Coppini, now living in New York, has for years

**Columbia, by Coppini, for a memorial arch at the University of Texas.**

been working on a Memorial Arch to be erected over the main entrance to the University of Texas campus at the cost of $250,000. Many of the figures for the arch have already been finished.

### GOOD MUSIC IS REALLY POPULAR IN TEXAS

Along with increased demand for pictures and statuary in Texas has come an

Lady Macbeth, by Elisabet Ney.

increased demand for good music. Really good music is more popular in Texas cities than any other form of art. About 1920 the Chicago Opera Company began coming to Texas, and now San Antonio, Dallas and Houston have regular opera seasons. The San Carlo Opera Company, however, has probably done more to develop a taste for opera in Texas than any other company. The Boston and Scotti companies have also toured Texas. S. E. Ashbury, of College Station, has for years been working on an opera of Texas that will interpret its development into a nation. San Antonio is regarded as the musical centre of the state.

Oscar J. Fox of that city has already been mentioned for his compositions of cowboy songs. Among many songs that he has printed Old Paint and Oh, Bury Me Not on the Lone Prairie are favorites. David Guion, of Dallas, like Mr. Fox a native Texan, has arranged cowboy songs also; but the international reputation he has won depends largely on his compositions of negro spirituals. His music to the old-time "breakdown," Turkey in the Straw, is immensely popular.

John M. Steinfeldt, pianist and founder of the San Antonio College of Music, is known for his compositions. A native San Antonio pianist and composer, Harold Morris, now lives in New York; the New York Philharmonic and Chicago Symphony orchestras have both played his compositions. Carl Venth, Director of the Conservatory of the School of Fine Arts, Texas Woman's College, Denton, has published more than a hundred piano and violin pieces and songs.

Aspiration, by Bonnie MacLeary.

Bronze figure of heroic size, by Bonnie MacLeary, for the Victory monument at San Juan, Porto Rico.

# HOW THE FATHERS OF THE REPUBLIC LIVED

This room in the Witte Museum in San Antonio is devoted to early Texas. The bed was made by the slaves of Anson Jones, last president of the Republic, and used by him. The rocking chair belonged to Sam Houston and the powder horn to Davy Crockett. Note the warming pan beside the fireplace.

This room in the Governor's mansion at Austin is notable for the great four-poster bed used by Governor Houston, and the desk which was used by Stephen F. Austin at the home of his sister, Mrs. Perry. The spinning wheel is of about the same date. The lighting fixtures are modern, of course.

Upper picture courtesy Witte Museum; lower by Jordan Co.

Residence of Sam Houston at Huntsville.

# GREAT SONS OF TEXAS

THE older histories were often little more than the stories of the important men of the time. Usually they had risen to prominence either by accident of birth, by some feat of strength, by cunning or by skill in arms. We find, therefore, that many of the older histories are accounts of kings, generals or statesmen who led the people in wars against their neighbors, or else built up the power of the kingdom.

In our day histories are more concerned with the common man, and with the actions and thoughts of the people as a whole. We cannot neglect the great men, however, and in this chapter we shall tell you something about a few of those men who have influenced the history of Texas. Since there were few English-speaking men in Texas until about a century ago, we shall find that the early leaders were born elsewhere. In fact Governor Hogg, who was elected in 1890, was the first governor born in the state. For that matter Texas, to-day, welcomes all who come to help build up the commonwealth, and some of the present leaders in many fields were born outside the state.

We shall speak first of the "Father of Texas." No other state owes its position so completely to one man as does Texas to Stephen Fuller Austin. His dream of making the Texan wilderness a model state resulted directly in the making of an Anglo-American Texas. The annexation of the state brought about the Mexican War, with the acquisition by the United States of the Southwest from the Rio Grande to the Pacific—the territory containing the major portion of the wealth of petroleum of the United States.

Stephen F. Austin was born in Wythe County, Virginia, November 3, 1793. His father, Moses Austin, born in Connecticut in 1751, was descended from a South of England family which had come to America in 1638. He emigrated to Virginia, thence to Missouri where he lost his fortune, and in 1820 he journeyed on horseback to San Antonio to obtain land upon which to settle a colony in Texas, then attached to Mexico. Thanks to the intervention of Baron de Bastrop, he was promised a tract of land. The grant was made in January, 1821, but Moses Austin died in June, before he had seen the papers. Before his death

he had written to Stephen pledging the son to carry on the work of colonization.

The young man had attractive manners and a winning personality. He had been educated at Transylvania University at Lexington, Kentucky, had served several terms in the Missouri legislature, and was prospering in business when a St. Louis bank failure left him penniless. Somewhat unwillingly he had agreed to his father's plans, and meanwhile took up the study of law in New Orleans. After some delay the grant to Moses Austin was transferred to his son, and lands were selected along the Brazos and the Colorado rivers. Every man was to have 640 acres with 320 more for the wife, 160 for each child, and 80 for each slave, subject to a small fee to be paid to Austin. He was also to govern the colony.

Just now Mexico was throwing off the rule of Spain. It seemed necessary for Austin to go to Mexico City to have his grant confirmed by the new government. He spent a year there and succeeded in spite of the confusion. On his return in 1823 he issued a code of laws under which the colony lived until 1828. These were busy years for him. He was truly the father of his people. He allotted lands, decided disputes, punished criminals, dealt wisely with the Indians, encouraged the building of churches and schools and kept peace with the changing governments in Mexico. During all this time he was training the colonists in self-government.

Austin and his taller neighbor Houston, both modeled by Elisabet Ney, stand in the entrance hall of the Capitol.

Many other Americans came to Texas and soon disputes with the Mexican government arose. In 1830 an act was passed, forbidding further immigration from the United States, but this provision was suspended for the Austin colony. Austin was always tactful and did much to keep the peace. The people wished to have Texas separated from Coahuila and Austin presided at the convention of 1832 which asked that Texas be made a separate state under Mexico. Another convention the next year drew up a constitution for the state when formed, and asked Austin to take the petition and the proposed constitution to Mexico City, and also to ask the repeal of the law of 1830.

Austin reached Mexico City in July, 1833, and found the country in an uproar of contending factions. Sometimes he was encouraged, and at other times he became almost hopeless. In one of his moments of depression he wrote a letter to San Antonio suggesting that a provisional state be organized. Finally he was able to secure the repeal of most of the law of 1830, and was told that the other items of the petition would be favorably considered. Just after he left Mexico City, the letter to San Antonio became known, and his arrest and return to the capital were ordered. For several months he was kept in close confinement. Later this strictness was relaxed, but he was not released until July 1835, and did not reach Texas until September.

During his confinement Austin had come to the conclusion that unless Texas should be made a state anarchy would follow, and, as Mexican troops were being sent to prevent rebellion, advised that volunteer companies be organized. These companies elected him commander-in-chief of the volunteer army, October 11, 1835. Though Austin doubted his fitness, he accepted in order to hold the

army together and the march on San Antonio was begun. Meanwhile at a consultation of delegates, Henry Smith was elected provisional governor over Austin, who was thought to be too conservative, but he was appointed to go to the United States to arouse sentiment in favor of Texas and to secure a loan. Some of Austin's speeches on this tour were really eloquent. He did not return to Texas until after the battle of San Jacinto. At the election for President of the Republic, his friends brought forth Austin's name, but he had been out of the state for three years and many of the newcomers did not know him. Then, too, he had opposed independence until he was sure that it was necessary. So he was passed over in favor of the more fiery Houston. Unruffled by his defeat, he felt it a duty to accept the office of Secretary of State offered him by Houston. While working on a letter to President Andrew Jackson advocating annexation, he sat in an unheated room at Columbia, contracted pneumonia and on Dec. 27, 1836, he died at the age of forty-three.

His countrymen mourned his death, and as the years pass, his wisdom, his unselfishness and his sacrifices appear more clearly. Truly he "had acquired an indisputable title to the respect of mankind."

### SAM HOUSTON, SOLDIER, PRESIDENT, GOVERNOR AND SENATOR

Sam, or Samuel Houston, the son of a Revolutionary soldier, was born on a farm near Lexington, Virginia, March 2, 1783. The father died, leaving a widow and nine children with little property, and the family soon removed to the Tennessee frontier. The boy had spent nearly all of his time in the open air, and when his older brothers tried to make a clerk of him, he ran away and lived among the Indians for about three years, until he was eighteen years old. Then he taught a country school for a few months, and attended an academy for a term. Next he served under Andrew Jackson against the Creek Indians, became a lieutenant, and began a life-long friendship with his chief.

Severe wounds prevented him from taking part in the New Orleans expedition, but he remained in the army until 1817 when he resigned and began the study of law. He was soon admitted to the bar, and was elected district attorney and major-general of the state militia. From 1823 to 1827 he was in Congress, and in 1827 became governor.

Now comes an episode which is to this day a mystery. In 1829 General Houston married and within three months his wife left him, for what reason no one knows. Houston resigned the governership and went to live among his friends the Cherokees, who were about to remove to Indian Territory. In 1832, President Jackson, his old chief, now President, appointed him to negotiate treaties with some Indian tribes in Texas which had been crossing the border, and soon he determined to remove to Texas. From that time until the end of his life he was a prominent figure in the life of the state.

He was a member of the convention of 1833 which drew up a memorial asking that Texas and Coahuila be separated,

This statue of Houston and that of Austin were modeled by Elisabet Ney, the most famous Texan sculptor.

and was chairman of the committee to draw a constitution for the state, if formed. When the War for Texan Independence broke out in 1835, he was first made commander of the forces in East Texas and soon was made commander-in-chief of the regular army to be raised. Bitter quarrels between the provisional governor, Henry Smith, and the Council hindered the formation of a regular army, and also led to the defeat and massacre of the volunteer bands at the Alamo, Goliad and elsewhere.

Photograph by Baker.

**Sam Houston bought property at Huntsville in 1847 and erected the residence shown at the head of the chapter and this log law office. In 1911 the students of the college named in his honor bought fifteen acres of the land including the buildings and presented it to the State of Texas. It is now a state park.**

After independence was declared Houston was continued in his position and ordered to take command of all the scattered volunteers, but it was already too late to save the Alamo and Goliad. Houston had only a few hundred men at Gonzales, while Santa Anna the Mexican commander had a large force. He ordered a retreat to the Colorado River and then to the Brazos. This is the occasion of the "Runaway scrape" about which you are told in the first chapter. Santa Anna followed slowly, and all Texas demanded that Houston stop and fight. Meanwhile Santa Anna crossed the Brazos and turned toward Galveston Bay. Houston followed and took position at the point where the San Jacinto River joins Buffalo Bayou. Here on the afternoon of April 21, 1836, he attacked Santa Anna while the Mexican army was taking its afternoon nap. Houston had less than 800 men, and Santa Anna over 1,300, but the Texans crying, "Remember the Alamo!" "Remember Goliad!" fought with fury and in less than half an hour 600 Mexicans were dead, over 700 were wounded or captured and only a few stragglers escaped. Santa Anna himself was a prisoner. Only a few Texans were killed and about twenty-five were wounded, including Houston himself.

Though Houston opposed and prevented the execution of Santa Anna, demanded by many of the soldiers and citizens, his popularity was sufficient to cause his election as the first permanent

president of the republic in 1836, and he again served from 1841 to 1844. When Texas was annexed to the United States, he became one of the first United States Senators and served until 1857.

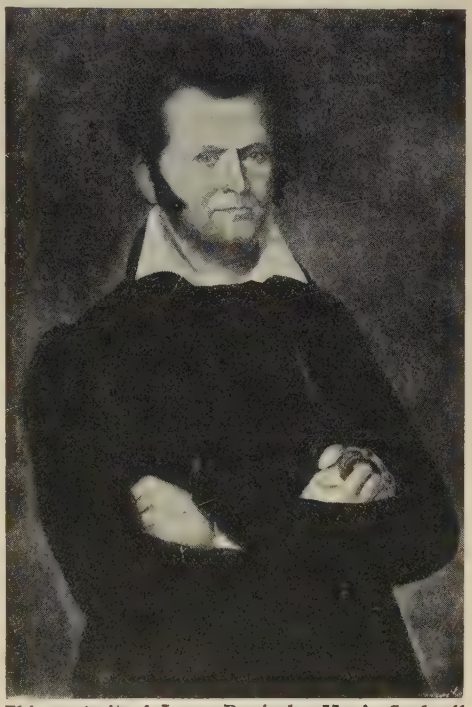
He took a prominent part in the discussions of the Senate, speaking as a Union Democrat and always demanding fair treatment for the Indians. Secession sentiment in Texas was growing and corresponding opposition to the strong union sentiments of the Senator. To test the question he offered himself for governor in 1857, but was defeated and also failed of re-election to the Senate.

Undaunted he again offered himself as a candidate for governor in 1859, and this time was elected, but it was soon evident that he had been chosen because of his personal popularity and not because the people accepted his views. As governor he stood firm as a rock against secession, but public sentiment was too strong and on February 1, 1861, a convention adopted an ordinance of secession. This was approved by a large majority at an election on February 23, and took effect on March 2, the anniversary of Texan independence. On March 5, the convention voted to join the Confederacy. Houston was willing to accept the independence of the state, but refused to take the oath of allegiance to the Confederacy. The convention then declared his office vacant and the lieutenant-governor, Edward Clark, took charge.

When the old lion retired to his home at Huntsville, few men in Texas were more unpopular. It seemed as if all his past services had been forgotten. He lived quietly, consented to his son's enlistment in the Confederate army, but did not change his own views. He died July 26, 1863, and soon the bitterness died away. As the years pass his character, and his services to his adopted state, stand in clearer light and now he is revered as one of the greatest sons of Texas.

### William Barrett Travis, Defender of the Alamo

William Barrett Travis was born in Edgefield County, South Carolina, in 1811, studied law and began to practice in Alabama. He removed to Texas in 1831 or 1832, and soon began to urge separation from Mexico. He took part in some skirmishes and led the expedition which captured Anáhuac in 1835, and was ordered by General Houston to raise a force to relieve the little garrison in the Alamo, but was able to enlist only a few men. Though he felt that he was going to his death, he reached San Antonio and took command. On February 24 he sent that immortal appeal for help which is printed on page 18. From February 23 until the morning of March 6, Santa Anna's army bombarded the fortfication. Early on the morning of March 6, the attack was made—2,400



This portrait of James Bowie by M. A. Cardwell is one of the most striking of the many paintings of Texas heroes.

men against 180. The wall had been broken, and though the garrison fought to the last, all were slaughtered. Travis died that Texas might live. It is peculiarly suitable that the county in which the capital is situated should bear the name of Travis.

### James Bowie, Who Died at the Alamo

James Bowie, was born in Burke County, Georgia, probably in 1796, but was taken to Louisiana at an early age. It is said that he and his brothers were at one time engaged in smuggling negroes into Louisiana from the privateering headquarters on Galveston Island. He

removed to Texas in 1828, took part in the revolt against Mexico, and fought with brilliant courage at the battles of Nacogdoches and Concepcion. During the siege of the Alamo, he was ill of pneumonia, but is said to have fought from his cot. His body was found in a little room with numbers of those of the foe. He is usually credited with having

This picture of Davy Crockett, painted by Wm. H. Huddle, hangs in the entrance hall of the Capitol at Austin.

made the first specimen of the heavy hunting knife that bears his name from a large file. Though he used the weapon in a famous duel in 1827, some of the best authorities think that it was first made by his brother, Rezin P. Bowie. Both a Texas county and a Texas town bear his name.

### DAVID CROCKETT, THE ECCENTRIC, HUNTER AND LEGISLATOR

David Crockett (better known as Davy Crockett), was born in Limestone, Tennessee, August 17, 1786. Widely known for his skill as a huntsman, he was reputed to have killed seventeen bears in one week. In the Creek War of 1813-14 he commanded a battalion of mounted riflemen under General Andrew Jackson. He served as a member of the Tennessee legislature from 1821 to 1824, and in the national House of Representatives as a Democrat from 1827 to 1831 and from 1833 to 1835. His eccentric humor attracted nation-wide attention. One of the best known of his mottoes was: "Be sure you are right, then go ahead." But his independence led to a breach with his party. A document purporting to be his autobiography was published in 1834. He came to Texas in 1836, and was killed at the Alamo only a few weeks after his arrival. Though he did not live long in Texas, he gave his life for the infant republic. The sixth largest county in the state is named for him and also the county seat of Houston County.

### JAMES W. FANNIN, JR., WHO DIED AT GOLIAD

James W. Fannin, Jr., was born in North Carolina in 1800, removed to Texas in 1834, and immediately engaged in the war of independence. With Bowie he defeated the Mexicans at Concepcion in 1835, and was appointed colonel in the regular army. Ambitious to become the savior of Texas, he and his friends succeeded in having him placed in charge of an independent expedition against Matamoros. It was badly managed and a part of the expedition was destroyed at San Patricio while Fannin fortified Goliad. He has been severely criticized for not marching to the relief of the Alamo. After that disaster Gen. Houston whose powers had been increased, ordered him to destroy Goliad and march to Victoria, if necessary throwing his surplus cannon into the river. As he had sent a part of his men to Refugio, he delayed several days and then attempted to save most of his artillery. He was overtaken on the prairie, and March 20, 1836, surrendered as he was greatly outnumbered. The men were marched back to Goliad, and with other prisoners (390 in all) were massacred (March 27) by direct orders of Santa Anna. Colonel Fannin's ambitions and his mistakes of judgment were costly to Texas, but his absolute fearlessness and the pathos of his death have made him one of the heroes of the state, which has named a county in his honor.

### MIRABEAU BUONAPARTE LAMAR, SECOND PRESIDENT OF THE REPUBLIC

Mirabeau Buonaparte Lamar, the Father of Public Education in Texas, was born in Louisville, Georgia, in 1798. He founded a states'-rights newspaper, the Columbus *Independent*, in 1828, came to Texas in 1835 and was commissioned major-general for leading the cavalry charge which decided the battle of San Jacinto. He served successively as attorney-general under President Burnett, secretary of war, and first vice-president of Texas. From 1838 to 1841 he was president of the Republic. In his message to the Third Congress of the Republic he proposed granting three leagues of land to each county for the support of an academy and fifty leagues for the endowment of universities. Lamar was opposed to annexation to the United States and dreamed of a great independent southwestern republic which should stretch from the Gulf of Mexico to the Pacific. He was also responsible for placing the capital at Austin, then on the frontier. Many people thought this site entirely too far to the west. He served in 1846 under General Taylor at Monterey, and later had charge of a company of Texas Rangers stationed at Laredo to protect the border from the Comanches. In 1857 he was appointed United States Minister to the Argentine Republic, though he did not serve, and in 1858, Minister to Nicaragua and Costa Rica. He died in Texas in 1859.

### THOMAS JEFFERSON RUSK, ONE OF THE FIRST SENATORS FROM TEXAS

Thomas Jefferson Rusk, who took a leading part in the annexation of Texas to the United States, was born in Camden, South Carolina, in 1802. He studied law under John C. Calhoun and began to practice in Georgia, but removed to Texas in 1834. He was a member of the Convention of 1836, fought bravely at San Jacinto, and was made Secretary of War of the Republic of Texas. When General Houston went to New Orleans he left Rusk in command of the army and he was active in the warfare against the Cherokee Indians. A man of brilliant intellect, he served as Justice of the Supreme Court of Texas from 1838 to 1842. The first legislature after annexation chose him and Houston to the United States Senate. He served from 1846 until his death by his own hand in 1857.

### ANSON JONES, THE LAST PRESIDENT OF THE REPUBLIC

Anson Jones was born at Great Barrington, Massachusetts, in 1798. He studied medicine and after living in various places, came to Texas in 1833. During the war for Texan independence, he served as a surgeon, and was present at the battle of San Jacinto. In 1837 he was a member of the second Texas Congress, and in 1838 was appointed Minister of Texas to the United States. On his return he served successively as president of the Texas Senate, Secretary of State, and as the last president of the Republic of Texas, until, in 1846, when he turned the government over to the first governor of the state. For five years he controlled the foreign policy of Texas, and perhaps more than any other one man was responsible for annexation. He lost favor with the people, however, and never held another office. He wrote a journal and autobiography which were published in 1859. He died by his own hand in Houston on January 7, 1858, in the same house in which he had commenced his public career in Texas. A county and its county seat have been named in his honor.

### ALBERT SIDNEY JOHNSTON, THE GREAT SOLDIER

Albert Sidney Johnston, perhaps the most distinguished soldier connected with Texas, was born at Washington, Kentucky, in 1803, graduated from the U. S. Military Academy in 1826, and while at West Point became a lifelong friend of Jefferson Davis. He served in the Black Hawk War, but resigned and went to Texas. He volunteered as a private in the War for Independence but was speedily appointed adjutant-general and later commander of the army. In 1838 he was appointed Secretary of War, and did much toward securing the border against invasion. He again retired to private life in 1840, but at the opening of the Mexican War he organized the First Texas Riflemen for service on the Rio Grande. In 1849 he returned to the United States Army, was made paymaster, and in 1855 appointed colonel of the Second Cavalry. His lieutenant-colonel was Robert E. Lee. Two years later, when the Mormons defied the Federal Government, he was sent to restore order in Utah. Breveted brigadier-general, he remained at Salt Lake

City until 1860, when he was transferred to the department of the Pacific. On the formation of the Confederacy, he resigned, went to Richmond, was appointed general and assigned to the command of the department of the West. He attacked Grant's army at Shiloh Church April 6, 1862, but was mortally wounded while leading a charge. Many students of the

Albert Sidney Johnston, the most distinguished soldier connected with Texas, is buried in the state cemetery at Austin.

war think that the fate of the Confederacy might have been different if he had lived.

### JOHN BELL HOOD, A BRAVE AND GALLANT SOLDIER

John Bell Hood, a Texan by adoption, was born at Owingsville, Kentucky, in 1831. He graduated at West Point in 1853 while Robert E. Lee was superintendent. On graduation he was sent to California and became acquainted with Captain U. S. Grant. He next served in Texas, in the Second Cavalry, under Colonel Albert Sidney Johnston, with Robert E. Lee as lieutenant-colonel. He entered the Confederate army in 1861, became brigadier-general, and he and his Texas Brigade became famous as desperate fighters. He lost the use of an arm at Gettysburg and lost a leg at Chickamauga. His reputation as a daring and gallant soldier led President Davis to appoint him to succeed Joseph E. Johnston in command of the army around Atlanta, with temporary rank of general. He was defeated there and moved back to Tennessee to attack the Federal forces there. He was defeated at Franklin, and in the battle of Nashville (December 15-16, 1864) his army was almost destroyed. After the war, he went into business at New Orleans. He died in 1879. General Hood was a valuable subordinate, but apparently too rash for the command of an independent army.

### LAWRENCE SULLIVAN ROSS, SOLDIER AND PUBLIC OFFICIAL

Lawrence Sullivan Ross, better known as "Sul" Ross, was born at Bentonsport, Iowa, in 1838. His father, Captain S. P. Ross, who moved to Milam County, Texas, in 1839, was an Indian fighter and killed the notorious Comanche chief, Big Foot. Young Ross entered Baylor University, but later transferred to Wesleyan University in Alabama, where he graduated in 1859. Before graduation he had some experience in fighting Indians, and after leaving college, he became captain of sixty rangers and again went after the Comanches. He routed them at the Battle of Pease River and killed their chief, Peta Nocona. In recognition of this service, Governor Houston appointed Ross as aide-de-camp, with the rank of colonel, but in 1861 Ross resigned in order to enter the Confederate service. When appointed brigadier-general, he was said to be the youngest brigadier in the Confederate army. He fought in a total of a hundred and thirty-five battles, and had five horses shot from under him. After the war he was sheriff of McLennan County, a member of the constitutional convention, and in 1881 a member of the state senate. In 1886 he was elected governor and re-elected two years later, even his political opponents voting in his favor. His administration covered a period of unusual prosperity. When he retired from office in 1891, he became president of the Texas Agricultural and Mechanical College at Bryan. He served until he died, in 1898.

### ROGER QUARLES MILLS, AUTHOR OF THE MILLS BILL

Roger Quarles Mills, the father of the Mills Bill which greatly reduced tariff

duties, was born in Todd County, Kentucky, in 1832. He went to Palestine, Texas, in 1849, and studied law while acting as clerk in the post office. By a special act of the legislature he was admitted to the bar before he was twenty-one. He was elected to the Texas House of Representatives in 1859, and at the outbreak of the Civil War entered the Confederate army as a private. He soon became colonel and commanded the Tenth Texas Infantry. He served in the United States House of Representatives from 1873 to 1892, when he was chosen to the senate to fill an unexpired term. He was elected for the full term, serving till 1899. In Congress he was recognized as an authority on the tariff. As chairman of the Ways and Means Committee of the House during President Cleveland's first administration he reported the Mills Bill, which provided for a reduction of the duties on many articles and for placing others on the free list. This bill was passed by the Democratic House but was so amended by the Republican Senate that it was no longer acceptable to the House, and therefore did not become a law. In 1891 Mills was a candidate for Speaker of the House, but was defeated. During the free silver controversy he sacrificed his re-election by adhering to the Cleveland wing of the Democratic party. When his term in the senate expired he retired to Corsicana, where he practiced law. He died in 1911.

### GAIL BORDEN, A TEXAN WHOSE NAME IS NATIONALLY KNOWN

Gail Borden, Jr., the inventor, was born at Norwich, New York, in 1801. As a young man he taught school and surveyed land in Mississippi. He went to Texas in 1829, was employed by Stephen F. Austin to supervise the official surveys, and made the first topographical map of Texas. He was sent as a delegate to the Convention of 1833, and two years later helped establish the Telegraph and Texas Register. He was made Collector of Customs at Galveston by President Houston, and from 1839 to 1857 was agent for the Galveston City Company. The difficulties of travelers crossing the plains so impressed him that he invented a form of pemmican which has been carried by Arctic explorers. He also invented a meat biscuit which won for him a medal at the World's Fair in London in 1851 and an honorary membership in the London Society of Arts. He lost his property, returned to New York and discovered an improved method of condensing milk. Now condensed milk is used in every part of the world. Borden also devised a way of condensing meat juices, tea, coffee, cocoa and fruit juices, and eventually transferred his plant for making beef extract to Borden, Colorado County, Texas. He died at his home on the banks of Harvey's Creek, in 1874. Borden County and the county seat, Gail, were named in his honor.

### JOHN HENNINGER REAGAN, ADVOCATE OF RAILWAY REGULATION

John Henninger Reagan was born in Sevier County, Tennessee, in 1818, came to Texas in 1839 and became a valiant Indian fighter. Admitted to the bar in 1846, he first came to prominence as judge of the ninth judicial district, which post he held from 1852 until 1857. From that date until 1861 he was a member of the United States House of Representatives. He was a delegate to the Texas Secession Convention, and during the Civil War was Postmaster-General of the Confederacy. In 1865 he was also acting Secretary of the Treasury. He accompanied Jefferson Davis in his flight from Richmond, was captured with him and held prisoner in Fort Warren until the October following. During his imprisonment he wrote the famous Fort Warren letter, advising the people of Texas to confer civil rights on the negro and admit the more intelligent to the suffrage, lest worse might come. This letter aroused much antagonism at the time, but he was again elected to the House of Representatives, and served from 1875 to 1887. For most of this period he was a member of the Committee on Commerce, and was joint author of the Cullom-Reagan Interstate Commerce Act. He was transferred to the United States Senate in 1887, where he continued to be active in promoting interstate commerce legislation.

Governor Hogg persuaded him to resign from the Senate to become chairman of the Texas Railroad Commission, in 1891. In this office he served until 1903. Under his guidance the Commission did much to correct abuses which had grown up in the matters of railway and express rates, and also in the capitalization of railways. He died in 1905 at the age of eighty-seven.

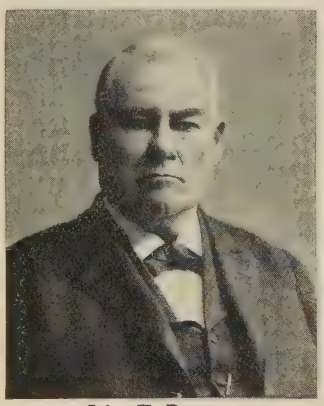
### JAMES STEPHEN HOGG, WHO ACCOMPLISHED THINGS

James Stephen Hogg, the first native-born governor of Texas, was born near Rusk in 1851, of Irish ancestry. He was left an orphan at the age of twelve, but managed to pick up the art of setting type, and later established two newspapers. He studied law, and soon began to hold office. He was in turn justice of the peace in Ward County, county attorney and district attorney. In 1886 he was elected attorney-general of Texas and at once began the warfare against the evil practices of certain corporations which brought him fame, and promoted him to the governor's chair.

In the early days Texas had been so anxious to get railroads that all sorts of inducements, especially gifts of lands, had been offered. In the eighties people began to wonder whether the roads had been a blessing. Governor Hogg during his two terms (1891-95) forced through an act creating a railroad commission to which was later given the right to regulate the issue of stocks and bonds by the railroads. He was also active against the trusts and monopolies, especially those owning large tracts of land, and demanded that aliens should not own land in Texas. Governor Hogg was a large man with a jolly smile and a booming voice. He loved a fight and was engaged in controversy much of his life. He retired from office poorer than when he entered politics, and set out to make a competence. He was successful in this, but died in 1906, at the early age of fifty-five. Jim Hogg County is named for him. It was erected in 1913 from portions of Brooks and Duval Counties.

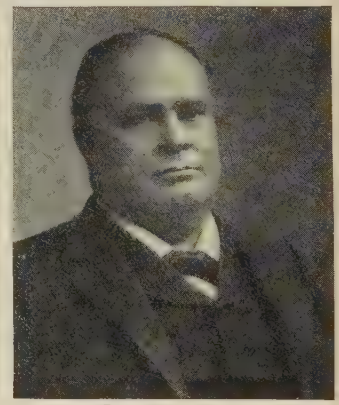
### CHARLES A. CULBERSON, WHOM TEXAS HONORED

Charles A. Culberson, the son of David B. Culberson (for twenty-two years congressman from Texas) was born at Dadeville, Alabama, in 1855 but was taken as an infant to Texas. Graduating at Virginia Military Institute in 1874, he studied law under his father and at the University of Virginia, 1876-77. As a practicing lawyer, he eventually (in 1887) settled at Dallas. His first political office was county attorney of Marion County. He was elected attorney-general of Texas in 1890 and in 1892, and governor in 1894 and 1896. He was then elected to the United States Senate, where he served with distinction four terms (1899–1923). He was chairman of the Judiciary Committee in the Sixty-third Congress; delegate-at-large to the Democratic National Conventions of 1896, 1904 and 1912. He died in the spring of 1925.



John H. Reagan.

C. A. Culberson.



James S. Hogg.

### HAYS, McCULLOCH, WALLACE, FORD AND OTHER TEXAS RANGERS

The Texas Rangers are famous in song and story, and the books which have been written on their exploits tell only a small part. The name, however, has not meant exactly the same thing during the whole of the state's history. Their early history was written in blood and fire, for the years following Texan independence were marked by fierce warfare with the Indians. The rangers were originally, in 1837, organized semi-officially to protect the settlers from the thieving and murdering of the red men, and their chief qualification was the ability to ride and shoot. They had also to be men of the highest integrity, for they "ranged"

with practically no direction from headquarters. They wore no uniform and provided their own equipment.

The name came to be applied to the Terry Rangers when, at the outbreak of the Civil War, the rangers were organized to fight on the side of the South, under Colonel Terry. There followed a series of engagements in which the rangers distinguished themselves, especially at the battle of Shiloh. Indeed, only one in five of those mustered in came out alive. It is thus that "Terry's Texas Rangers" are written down in history.

Benjamin Franklin Terry was born in Russellville, Kentucky, in 1821, and with his mother and younger brothers came to Brazoria County, Texas, when he was ten. He was only fourteen at the time of the battle of San Jacinto, but he ran away to join the army, arriving just after the capture of Santa Anna. In the gold days of 1849 young Terry went to California, and when he returned he had the means to purchase the Oakland sugar plantation in Fort Bend County. He was a delegate to the secession convention in 1861, and immediately afterward went to Virginia, taking part in the battle of Manassas. He thereupon returned to Texas and at Houston organized his famous regiment of cavalry, of which he was made colonel. He himself was killed in an impetuous charge upon the enemy at Woodsonville, Kentucky, in December, 1861.

The Indians were active during the Civil War and the legislature provided for ten companies which patrolled the frontier from the Red River to the Rio Grande. When the Indian danger became less acute, Governor Richard Coke reorganized the rangers in 1874 by arranging six companies of seventy-five men each, and the rangers became a mounted constabulary to police the frontier—three thousand miles of it, if one includes the meanderings of the Rio Grande. Their task now was to rid the state of desperadoes of all kinds, horse and cattle thieves and train robbers, whether Indian, Mexican or white. They continue to exist, though much reduced in number. There are to-day some fifty officers and men divided into one headquarters company and four companies of mounted men. Among the names that stand out in the history of the Texas Rangers are those of "Ben" McCulloch, "Jack" Hays, "Big-foot" Wallace and "Rip" Ford. There are others perhaps equally worthy of mention.

Ben McCulloch was a slim, light-haired Tennesseean who had hunted bears professionally for food. At twenty-three he came to Texas with "Davy" Crockett. He was ill at the time of the siege of the Alamo, though at the battle of San Jacinto he put his marksmanship to good account. From 1837 to 1847 he was the chief defender of the Gonzales region against Indians and Mexicans—and so popular was he that, having no home of his own, he was made at home by every settler he met. In 1839 he was elected to the Texas congress, and fought a duel with Colonel Reuben Davis which resulted in permanent injuries to one of McCulloch's arms. He was elected to the first state legislature, and in 1846 was appointed major-general of all the militia west of the Colorado. When the Mexican War broke out, he organized a company of picked scouts who fought with distinction at Monterey. In 1849 he went to the California gold fields and was made sheriff of Sacramento. Returning to Texas in 1853 he was appointed United States marshal for eastern Texas. He became brigadier-general in the Confederate Army and won the battle of Oak Hills. He was killed at Pea Ridge (Elk Horn) in 1862.

Ranger John Coffin Hays was another grave, slender young Tennesseean. He emigrated to Texas about 1837, when he was nineteen, and at twenty-one was in command on the front, and a major. Between intervals of surveying on the frontier he fought scores of engagements with the Comanches and won a name as a brilliant Indian fighter. In the battle of Salado in 1842 he was captain of the advance company, as he was of the Somervell expedition against Mier. In 1844, accompanied by sixteen daring men, he fought seventy Comanches hand to hand. During the Mexican War he commanded a regiment under General Taylor and won national fame for storming Independence Hill and the bishop's palace at Monterey. Going to California with the gold hunters of 1849 he became the first sheriff of San Francisco. For years thereafter he was surveyor-general of the United States for California. He died in 1861.

"Rip" Ford, as John S. Ford was popularly called, was employed by the Federal Government in 1850 to defend the frontier against Indians; and by the time the Comanches were removed to Indian Territory in 1859 he had become a Colonel of Texas Rangers. Later, when the Mexican outlaw Juan Cortina began his depredations along the Rio Grande frontier, Ford and his rangers rendered effective aid when Colonel Robert E. Lee drove Cortina back into Mexico. During the Civil War, he performed daring feats in the capture of forts and military posts along the border. Indeed, the last battle of the war was an engagement between Texan troops under

"Big Foot" Wallace, from a drawing in Sweet and Knox, On a Mexican Mustang through Texas.

Colonel Ford and a large Federal force at Palmito Ranch, near Brownville.

William A. Wallace, famous huntsman and Indian fighter, was born at Lexington, Virginia, in 1816, and went to Texas in 1836, "dead set," as he expressed it, "on paying out the Mexicans" for the murder of his brother and cousin at Goliad. He took part as a major in the battle of Salado in 1842, then volunteered for service in the unsuccessful expedition against Mier, where he drew a white bean. The prisoners were marched to Mexico City. According to a story often told, when the prisoners were given new shoes, Wallace was unable to find the number twelves that he required, and a pair was made to order for him. The Mexicans gave him the nickname that clung for the rest of his life. On his return from Mexico, Wallace joined Colonel Jack Hays' Rangers and fought the Comanches with Ben McCulloch. Later he commanded a company of rangers. Later still he had charge of the mail carried by pony express from San Antonio to El Paso. Though he was constantly beset by Indians and Mexicans, it was his boast that never did he fail to deliver the letters intact. During his adventurous career, he was once captured by Indians and sentenced to death, but was saved by being adopted by an elderly squaw, and two months later escaped from the tribe. He spent his last years on a tiny ranch at the headwaters of the Atascoso River, where he held his own against the Indians and Mexicans.

### TEXANS OF THE PAST AND THE PRESENT

You will notice that we have given much space to Texans of the earlier period, and have mentioned few who have been prominent in the present century. An inquiring mind may ask whether this means that the men of the early years were greater than those of later times. It is a difficult question to answer—if it can be answered at all.

There is an old proverb, "Count no man happy until he is dead." Time has a queer way of changing values. Sam Houston was once the most unpopular man in Texas, Andrew Johnson and Grover Cleveland stand much higher to-day than when they went out of office, while some popular idols have grown smaller with the years.

During a hundred years Texas has changed from a wilderness with only a few white settlements to a great agricultural and industrial state with more than five million people. Pioneers had to be strong men, and pioneer life seems more romantic than our life to-day. Fighting Indians and wild beasts seems more interesting than driving an oil well or running a cotton gin. Then, too, beginnings are always more interesting than something already begun.

Perhaps these things explain our choice even if they do not answer the question. The position of the Fathers of the Republic is firmly established; Travis and Bowie died that Texas might live; the Rangers risked their lives to protect the people. Doubtless there are men in Texas to-day as wise, as brave, as unselfish as any of these, but we are too close to judge them.

Southern Baptist Tuberculosis Sanitarium, El Paso.

# RELIGION AND SOCIAL WELFARE

ELSEWHERE you will find chapters on the history and geography of Texas, and upon political, economic and intellectual conditions. These are, however, not all of life. The churches of Texas have been a very important factor in the life of the people of the state, and no account of Texas is complete without some reference to the churches and the various educational, charitable and benevolent institutions founded by them. It is proper also to tell something of the charitable and benevolent institutions supported by the state, and also to mention a few of the fraternal and benevolent societies.

Since Spain and France, the first nations to explore Texas, were almost entirely Catholic, it is natural that the Catholic Church should be the first to appear. It is said that Father Andreas de Olmos visited Texas as early as 1544, and that there were priests with the soldiers at El Paso in 1685, or soon after; but the first Catholic services of which we can be certain were held in La Salle's settlement, Fort St. Louis, between 1685 and 1687, when it was destroyed by the Indians.

The Spanish government, alarmed by the news of French settlement, determined to occupy Texas. The story of the missions is told in the first chapter, and we show pictures of several of those which are still standing. Whether in Texas, California, or some other part of Spain's dominion, the method of founding a mission was similar. A little band of friars found what seemed to be a favorable location, built huts for residences and a chapel, and began to preach to the Indians. As converts were made they were settled around the chapel and engaged in agriculture and stock-raising. At first all the products went into a common store. If the undertaking prospered stone buildings replaced the original log houses and some of the chapels erected were really beautiful. All of these taken together made up the mission. Near each of the important missions was a garrison of soldiers to protect the mission. This was a presidio. If a town developed it was called a pueblo. About twenty missions were established by Franciscan friars in various parts of Texas, and some of the buildings are still in fair condition. They represent much toil and heroic devotion on the part of the friars.

Perhaps the most important figure in the story of Texas missions was Father Antonio Margil, who founded many missions, of which the most noted is San José de Aguayo.

Taken as a whole the missions in Texas were not so successful as those in California. The Indians were more savage, the distances were greater, the civil and military officials were perhaps less sympathetic, and some of the locations were unsuitable. In 1794 control of the missions was taken from the friars and given to the civil authorities, and they began to decline. Division of lands among the Christian Indians was later ordered, but the process was not completed until 1827. Apparently the number of Christian Indians was never very large, and with the downfall of the missions, most of them reverted to their former condition. It seemed as if all the labor and devotion of more than a century had been for naught.

This drawing shows how a service for the Indians conducted by the Mission Fathers may have looked, two hundred years ago, or perhaps a little less.

During the period of the settlement of Texas by immigrants from the United States, and the succeeding struggle for independence from Mexico, Catholic influence naturally declined in spite of the fact that some of the immigrants from the United States were Catholic. In 1838 the Archbishop of New Orleans sent the Reverend John Timon, later Bishop of Buffalo, to investigate conditions in Texas. Though he found many Catholics, he reports that there were only two priests, both unworthy, in all the vast area. Father Timon was received with great respect by the Texas government and later, by vote of the Congress of the Republic, much of the church property which had been taken over was restored.

In 1840 Father J. M. Odin was placed in charge of the Church in Texas, and in 1847 was made Bishop of Galveston. His diocese included all Texas except El Paso County, which was attached to Arizona, and including himself there were thirteen priests in the diocese. Growth in numbers and influence has been steady, through natural increase and especially by immigration. Many of the European immigrants have been Catholics—Germans, Austrians, Poles, Bohemians, Irish, Italians, and, of course, Mexicans, who are by far the largest foreign element. Schools, colleges, religious houses, orphanages and hospitals have been established, and some magnificent churches have been built.

In 1874 the diocese of San Antonio was set up and in 1890 the diocese of Dallas to which El Paso County was attached. Corpus Christi was erected in 1912, El Paso in 1914, and finally the diocese of Amarillo was created in 1926. El Paso, however, includes a considerable part of New Mexico. In 1926 San Antonio was made an archdiocese.

The United States Census for Religious Bodies for 1926 reports a membership of 555,899 in Texas, with expenditures of $2,098,037, and the value of church edifices as $11,041,749. The Catholic Directory for 1928 reports for the six dioceses over six hundred priests, over seven hundred church edifices, about three hundred and fifty schools, nine orphanages and twenty-five hospitals. The "Catholic population" is given as 742,950. Corpus Christi and San Antonio report the Mexicans separately, 338,700 of them. The other dioceses make no distinction, but in some of them the Mexican population is considerable.

Comparison with the membership of

# MISSIONS IN AND AROUND SAN ANTONIO

On the left is the mission of La Purisima Concepcion and on the right is that of San Francisco de la Espada. Services are still held in several of the old missions.

San José was the largest and finest of all the Texas missions. It was begun in 1718 but not finished until many years later. The elaborate carving was done by an artist sent out by the King of Spain.

On the left is San Juan de Capistrano, which is still in a fair state of preservation. On the right is the Chapel of the Alamo, now in the heart of San Antonio.

Photographs, H. L. Summerville and Harvey Patteson.

Protestant churches in Texas is difficult for several reasons. Catholic statistics always include children who have been baptized though not yet confirmed, while Protestants usually count only those who have made a formal profession of faith. The Census Bureau takes 85 per cent of Catholic figures to secure a number corresponding to Protestant membership. Again, as mentioned above, a large part of the diocese of El Paso is in New Mexico. It is also possible, since many Mexicans are migratory, seldom remaining long in one place, that some of them may be counted twice.

### Many Protestant Immigrants Come into Texas

Just when the first emigrants from the United States came to Texas cannot be fixed with certainty. Even before the Louisiana Purchase, a few traders and settlers had trickled in, but not until after the Mexican Declaration of Independence was the number considerable. The Austin Colony (1821) was the first of several established before 1830, when further immigration from the United States was forbidden.

Mexico, following Spanish precedent, forbade every religion except the "Roman Catholic Apostolic," and when making grants of land required that the colonists brought in should be Catholic. No attempt to enforce the regulation was ever made, and there were many Protestants among the earlier settlers. In fact, one of the arguments for stopping further immigration was that "there is no one among them, in Texas, who is a Catholic." This was an exaggeration but at least eleven Baptist and several Methodist families are known to have lived in the Austin Colony, though they were not allowed to build churches. These seem to have been the first Protestant denominations to organize.

Photograph, courtesy Fort Worth Association of Commerce.

**St. Joseph's Infirmary at Fort Worth, under the charge of the Sisters of Charity of the Incarnate Word, cares for more than two thousand patients annually.**

### The First Methodists in Texas, and Their Preachers

During the early years of the last century the northeast corner of Texas south of the Red River was supposed to be a part of Arkansas, and was settled as early as 1815. There were Methodists here and William Stevenson preached to them as early as 1817, probably the first Protestant services in the state. Methodist preachers from Louisiana occasionally held services on the Texas side of the Sabine River not long afterward. Henry Stephenson preached in the Austin Colony as early as 1824 and local preachers seem to have held services occasionally in the Austin Colony. After 1833, as the American element grew stronger, services were more frequent and a church building was completed at Washington, Washington County, in 1838. It is difficult to determine whether this building or the Baptist church in the same village was first completed.

On the news of the Battle of San Jacinto, the Methodist General Conference of 1836 appointed Reverend Martin Ruter, then President of Alleghany College, Pennsylvania, to be Superintendent of the Texas Mission with two colleagues,

Robert Alexander and Littleton Fowler; all were able preachers and experienced organizers. Doctor Ruter died in 1838 but the work went on. The Texas Conference was established in 1840, and divided into Texas and East Texas in 1844.

This year the Methodist Episcopal Church divided upon the question of slavery and the next year upon the organization of the M. E. Church, South, the Texas Conferences became a part of the new organization. Growth in membership and influence has been rapid. Instead of the two Conferences of the Methodist Episcopal Church, South, of 1845, there are now five with a Mexican Mission besides. The Methodist Episcopal Church, often called the Northern Methodist Church, also has a considerable membership in Texas, and there are three other small Methodist bodies.

The Religious Census of 1926 reported 430,419 white Methodists, with expenditures of $8,206,656. The M. E. Church, South accounted for 380,453 members and an expenditure of $7,592,006. The M. E. Church had 42,959 members and spent $542,664. The three divisions of the negro Methodists had 58,185 members and spent $750,006. The whole number of the eight groups of Methodists was 488,604, making them rank third in the state. The number of churches was 4,230, worth $29,393,174.

While there were still only a few scattered Methodists in the state, they began to plan for a college. Rutersville College near La Grange was founded in 1840, with a faculty consisting of the president, his wife and one professor. It suspended in 1856. Many other colleges have been chartered since 1840. Some no longer exist, others have been consolidated, some have become junior colleges. There are now four strong institutions, Southwestern University at Georgetown, Texas Woman's College at Fort Worth, Southern Methodist University at Dallas, and McMurry College at Abilene. In addition there are six junior colleges, Kidd-Key, Lon Morris, Weatherford, Wesley, Westminster and Westmoorland, which are mentioned in the chapter on colleges. The Negro Methodists have Wiley College at Marshall and Samuel Huston at Austin, as well as two junior colleges, Paul Quinn at Waco and Texas at Tyler. The Methodist Orphanage at Waco was founded in 1894, with 11 children. It has received many hundred since. In several of the cities Methodists have built hospitals.

First Methodist Episcopal Church, South, Dallas.

### Some of the First Baptist Preachers in the State

The first Baptist preacher known certainly to have been in Texas, according to Carroll's History of Texas Baptists, was Joseph L. Bays. He was born in North Carolina but removed to Kentucky,

then to Missouri, and came to the Sabine River in 1820. He began preaching in private houses on the Texas side and once at least was arrested while preaching in the Austin Colony. After Texan independence he preached regularly. Freeman Smalley also preached in 1822, and perhaps others. T. J. Pilgrim organized a Sunday School in the Austin Colony in 1829.

The first Baptist church in Texas was organized in Crawford County, Illinois, in 1833 and transferred to Texas the next year. It was called the "Pilgrim Church of Predestinarian Regular Baptists" and the organizer and pastor until his death was Reverend Daniel Parker. It met first in the Austin Colony and then removed to East Texas. For a considerable time it had no church edifice, but services were held in schoolhouses and elsewhere. It existed thirty-four years and during that time organized several other churches. All of these were "Hardshell" churches, opposed to missionary effort and a paid ministry.

The first Missionary Baptist Church was organized at Washington, the cradle of Texas independence, in 1837, and at once appealed to the American Baptist Foreign Mission Society for aid in evangelizing Texas. The appeal was answered by the Home Mission Society and the Reverend James Huckins was sent in 1840 and labored for several years, preaching and organizing churches. Almost from the beginning he gave part of his time to the colored population. His later years were devoted to the pastorate and to the infant Baylor University, which was soon founded.

In 1840 three little churches representing forty-five members formed the United or Union Association, the first general organization of Baptists in the infant republic of Texas, the forerunner, after many years, of the Baptist General Convention of to-day. There were probably not more than two hundred Baptists in all Texas then. As time passed other churches were organized through toil and sacrifice.

The leading history of Texas Baptists is a volume of more than a thousand pages, and it does not tell the whole story. It is evident that we cannot tell it here. It is enough to say that through immigration, through natural increase of Baptist families and through missionary effort, the numbers grew rapidly and have increased until Baptists are now the most numerous denomination in Texas if both whites and negroes are counted.

The First Baptist Church of Dallas is one of the most important churches of the denomination.

The United States Census of Religious Bodies for 1926 gives the number of white Baptists in Texas as 524,214. Of these 465,274 reported to the Southern Baptist Convention, 53,853 to the American Baptist Association and 5,087 were Primitives. There were also a few smaller groups. The total expenditures reported were $7,393,951, of which $7,118,858 was paid by churches belonging to the General Convention. The number of negro Baptists reported was 234,056, with expenditures of $1,398,713, besides 1,590 Colored

# TWO DENOMINATIONAL HOSPITALS

The upper picture is the Methodist Hospital in Houston and the lower is the Baptist Hospital in the same city. Though each is called by the name of a particular religious denomination, both are open to all sufferers without distinction of creed. Photographs, Calvin Wheat.

Primitive Baptists. This makes a grand total of 759,860 Baptists in the state, truly a wonderful growth since 1840. There were 5,944 Baptist churches worth over $32,000,000, counting both white and colored.

The Baptists in Texas showed their interest in education very early. An Education Society was organized in 1841, and in 1845 a charter for Baylor University, named for Judge R. E. B. Baylor, was secured. The preparatory department was organized at Independence, Washington County, the next year, and in 1847 the college department began, though there were only a few hundred Baptists in the state. Instruction in law was given in 1849. From this small beginning have grown the Greater Baylor at Waco and Dallas, and also Baylor College for women at Belton. Later other colleges were founded, but not all of them lived, for lack of resources. Additional Baptist institutions for higher education now in operation are Howard Payne College at Brownwood, Simmons University at Abilene, and also four junior colleges, Burleson College at Greenville (with which Rusk College was consolidated in 1928), the College of Marshall at Marshall, Decatur Baptist College at Decatur, and Wayland College at Plainview. Further information concerning these is given in another chapter. In addition, Baylor Academy at Belton and San Marcos Academy at San Marcos are the property of the Baptist General Convention of Texas.

The Southwestern Baptist Theological Seminary in the suburbs of Fort Worth grew out of the Theological Department of Baylor University. In 1908 it became a separate institution under the control of the General Convention of Texas. Other state conventions joined in its support and control, and in 1925 it was transferred to the Southern Baptist Convention. It was moved from Waco to Fort Worth in 1910. It includes Schools of Theology, Religious Education, Sacred Music and Missionary Training.

In recent years Texas Baptists have displayed much interest in humanitarian effort and have established several institutions. The Buckner Orphans' Home, founded by Rev. R. C. Buckner, is the oldest. This was organized in 1877, chartered in 1879 and the first children were received in 1880, in a rented house in Dallas. Land on the outskirts of the city was purchased and many buildings have been erected. The property of the institution is now valued at considerably more than a million dollars. Thousands of destitute children have been well cared for and prepared for useful lives during the existence of the institution.

Fort Worth Hall of the Southwestern Baptist Theological Seminary stands on Seminary Hill within the city limits of Fort Worth. The Seminary consists of four distinct schools, with separate faculties but under the same management.

There are numerous Baptist hospitals in the state. There are institutions at Dallas, Waco, Fort Worth, Houston, San Angelo, Harlingen, Wellington and Abilene, and the Southern Baptist Convention has a Tuberculosis Sanitarium at El Paso. Some of these are excellently equipped. There are other smaller hospitals.

These three named in order of organization in Texas, Catholics, Methodists and Baptists, include an overwhelming proportion of all the church membership in

# TWO UNIVERSITY HOSPITALS

John Sealy Hospital in Galveston is said to be the most richly endowed hospital in the United States. It is operated in connection with the Medical School of the University of Texas.

Photograph, Higginbotham.

Baylor Hospital at Dallas is operated in connection with the Medical School of Baylor University. It was formerly known as Texas Baptist Memorial Sanitarium.

Texas, 1,803,763 out of 2,280,514. There are several other denominations, however, which have a considerable membership, and without which no story of religious activity in Texas would be complete.

### The Disciples and the Churches of Christ

In common speech the denominational name Christian is applied to two different groups which are reported separately in the Religious Census. There are the Disciples of Christ and the Churches of Christ. The latter does, in fact, represent a secession, or rather a separation, of the conservative wing of the Disciples, from the main body. Several Disciples, or Campbellites as they were called in derision, were expelled from Baptist churches in Texas as early as 1841, and churches were organized soon after, perhaps as early as 1842. There has been a steady though not a remarkable growth since that time. The Religious Census for 1926 reports 489 churches with 77,150 members in Texas, with expenditures of $1,709,537. The churches were valued at $7,663,740. The Disciples maintain Texas Christian University at Fort Worth, which grew out of Add-Ran College, and two junior colleges, Carr-Burdette at Sherman and Randolph at Cisco. The Juliette Fowler Homes for children and the aged are at Dallas.

The membership of the Churches of Christ in Texas is greater than that of the Disciples, though in the United States as a whole it is only about one-third as large. In fact, the membership in Texas is greater than in any other state. There were 1,226 churches in 1926, with a membership of 98,909, expenditures of $1,091,544, and the value of the churches reporting was $4,076,250. The educational institutions include Abilene Christian College, and Thorp Spring Christian College, a junior institution at Thorp Spring.

Central Christian Church at Waco, one of the large churches of the city.

### The Different Branches of the Presbyterian Church

Presbyterians in Texas are divided into five branches: the Presbyterian Church in the United States (Southern Presbyterians), the Presbyterian Church in the

U. S. A. (Northern Presbyterians), the Cumberland Presbyterians, the United Presbyterians and the Colored Cumberland Presbyterians. The last two have only a few hundred members in Texas. The Northern and Southern Presbyterians divided on the question of slavery and secession and have not yet united. The Cumberland Presbyterians began to break away from the main body soon after 1800 and the separation was completed in 1810. Nearly a hundred years later (1904) the General Assembly of the Cumberland body agreed to unite with the Presbyterian Church of the U. S. A., but a minority of the ministers and people refused union and determined to continue the Cumberland Presbyterian Church.

**St. David's Episcopal Church in Austin, built in 1852, is the successor of Christ Church, founded in 1847 by the Reverend Charles Gillette, an early missionary of the Church in Texas.** Photograph, Jordan Co.

So far as known the first Presbyterian who preached in Texas was Sumner Bacon, a Cumberland Presbyterian, who preached in the Austin Colony as early as 1828 or 1829. He was followed by other Cumberland Presbyterians. The first church was probably organized in the Red River District in 1833.

There were regular Presbyterian preachers in Texas about this time but apparently the first church was organized by Rev. Hugh Wilson at San Augustine in 1837, and others soon followed. In 1840 Rev. Daniel Baker, the greatest figure in the early period of Presbyterianism, came to Texas, and both preached and taught. He was instrumental in founding Austin College, and Daniel Baker College was named for him.

As mentioned above the Presbyterian Church split into the Northern and Southern churches. Soon after the Civil War was ended, the Northern Presbyterians began to work in Texas, and in 1926 had 310 churches, 33,318 members, expended $944,216 and the value of church property reported was $4,603,817. The Southern Presbyterians had 372 churches with 45,610 members, expended $1,513,504, and the church property reported was $7,562,350. The remnant of the Cumberland Presbyterians reported 108 churches, 5,383 members, expended $128,694 and the church property reported was worth $341,065. Counting all five branches there were 813 churches with 85,506 members, which spent $2,606,384 and had church property worth $12,580,332.

Trinity University, a Cumberland Presbyterian foundation at Waxahachie, is maintained by the Presbyterian Church in the U. S. A. Austin College,

Daniel Baker College and Texas Presbyterian College for women are maintained by the Southern Church.

### SEVEN DIVISIONS OF LUTHERANS FOUND IN TEXAS

The Lutherans in the United States have divided into many different groups, depending largely upon language and location, but in a less degree upon doctrine and government. Though many have been consolidated twenty such groups still remain, seven of which are found in Texas.

The first Lutherans in Texas were probably German immigrants. Some came to Texas as early as 1823. Later there was a very large German immigration, of whom some were Lutherans. The first German preacher in Texas was Louis C. Ervendberg, who arrived in 1839 and preached in various places. He seemed to wish to unite all German Protestants in one body. Several Lutheran pastors were sent from Germany, and from the more settled portions of the United States about 1850. Norwegian and Swedish immigrants came after 1845 and churches were established.

In 1926 the seven groups of Lutheran churches had 384 organizations with 80,592 members. Expenditures were $833,192 and church property was reported as worth $2,564,680. Three-fourths of all Texas Lutherans belonged either to the Iowa Synod (38,825), or to the Missouri Synod (22,292), though the United Lutheran Church in America and the Joint Synod of Ohio each had over five thousand members. The Lutherans have maintained junior colleges at Clifton and Round Rock.

The first Protestant Episcopal missionary in Texas seems to have been Rev. Caleb S. Ives, who settled in Matagorda in 1838. Parishes were soon organized at Houston, Galveston and Austin, and by 1847 there were 200 communicants reported. The Diocese of Texas was formally organized in 1859 and since that time the dioceses of Dallas and North Texas have been established. While the Protestant Episcopal Church divided at the time of the Civil War, reunion was soon effected. In 1926 there were 218 churches with 32,700 members. The churches reporting spent $839,907, and the church property was worth $3,252,989. They maintain St. Mary's Junior College for girls at Dallas.

First Church of Christ, Scientist, Dallas.

A Jew, Samuel Isaacs, was a member of the Austin Colony in 1821, and others came to Texas soon afterward. Four were with Fannin, and one died at the Alamo. Several held public office under the Republic and later. However, they were scattered, and the synagogue at

Houston, apparently the first, was not established until 1854. In 1926 there were 49 congregations, though not all had synagogues, with a membership of 39,237. Expenditures were reported as $625,874 and the synagogues reporting were valued at $2,215,248. The average value of these synagogues was higher than that of the churches of any denomination of Christians.

Christian Scientists appeared in Texas about 1886, and in 1928 had 58 organizations but the membership was not announced. This membership is principally in the larger cities, and their buildings in Dallas, Fort Worth, Galveston, Houston and San Antonio are imposing.

There are numerous other religious bodies in Texas, but none has a very large membership. Some of these are new, and do not have a large membership anywhere. On the other hand, some denominations, Congregationalists and Unitarians, for example, which have many churches elsewhere, are not strong in Texas. The religious census reported eighty-six different religious bodies in the state.

Parkland Hospital, Dallas, maintained by the city.

### State institutions to promote social welfare

The story of what the state has done in the field of education, both elementary and advanced, is told in other chapters. Texas, however, has not considered that it has done its full duty by providing opportunity for normal individuals. The conception of social welfare is much wider.

From an early period the people of Texas have felt and shown a sense of responsibility for the welfare of the sick, the unfortunate, and the weak, physically and mentally. All over the state are great tax-supported institutions for the care of these classes, and the expenditure for their up-keep goes into millions. In addition to what is done by the state as a whole, much is being done by the cities and counties, which we cannot describe here.

One of the most important functions of the state is the care of the insane. Many years ago such persons were everywhere treated as criminals and were often confined in jails. Then "asylums" were organized to shelter or restrain them. Happily in this enlightened age it is recognized that they are sick and in many cases may be restored to health, mental and physical. In fact the mental health often improves with improvement in physical condition. So the institutions for their care are now properly called hospitals.

### The fine hospitals for the care of the insane

Of these Texas maintains five, in different parts of the state. The oldest, though not the largest, is the Austin State Hospital at Austin, which was established in 1860. The next in order of age is

Terrell State Hospital at Terrell, Kaufman County, in North Texas. The institution at San Antonio is third in age but the largest in size. In 1919 a new hospital was opened at Rusk, Cherokee County, East Texas, and another in 1922 at Wichita Falls, Northwest Texas.

All of these are under charge of skilful physicians, and have well-equipped wards with competent nurses and attendants. Dentists and X-ray operators are also attached, and most of them have teachers who strive to get the patients interested in various forms of handiwork. All five have farms which not only help to furnish food for the patients and those appointed to care for them, but also furnish healthful occupation to many of the patients. Colored people are cared for in separate wards or buildings. Texas has done much for the mentally sick, and the proportion of those cured or improved compares well with that in other states. Attached to the Austin State Hospital is the Pasteur Institute which examines animals suspected of being rabid, and also treats patients bitten by such animals.

### One of the most important institutions

No institution in the state is of more value than the State Tuberculosis Sanatorium at Carlsbad, Tom Green County, established in 1911. The location is excellent, and like the institutions already named it has a farm which furnishes food, particularly large quantities of milk and eggs. Many patients have been discharged as cured, and the disease has been arrested in hundreds more. Nearly all the nurses are patients who have been cured and wish to devote their lives to the care of other sufferers.

The institution also maintains an extension department which gives advice in individual cases, co-operates with teachers and health associations in spreading knowledge of the causes of the disease and methods of prevention and treatment, and also publishes a monthly paper which goes into thousands of schools and homes.

As you can see from the pictures which face this page, the buildings are planned to secure the greatest possible amount of sunlight and fresh air. The doctors who deal with this disease have found that these are the best medicine. When combined with an abundance of appetizing and nourishing food, which is, at the same time, easily digestible, sunlight and air will often arrest the disease. Fortunately Texas has no lack of all these things, and, therefore, a patient has a greater probability of recovery than one who must live in a harsher climate.

Another state hospital which does great service is the Abilene State Hospital for the treatment of epilepsy. This disease has always been a mystery, but this institution has succeeded in improving the condition of many of its patients.

The Austin State School is for subnormal individuals who cannot be properly cared for in homes. While some adults are here, the institution is designed especially for children. Instruction is given to those capable of receiving it, and some of the children, who could not keep up with their classes in ordinary schools, make considerable progress both in books and handicrafts.

Such children are always a problem, and it is a sad fact that the number who are below normal in intelligence seems to be increasing. The school is unable to take care of many who apply. If such children remain at home they are unlikely to improve, as they can be cared for only in an institution equipped for the difficult task. Such an institution may be able to prevent some of these unfortunates from being a burden, or even a menace to society.

Texas maintains several other institutions for children. The name of the State Orphan Home, situated at Corsicana, explains itself. Here, hundreds of orphans of various ages, are cared for, and taught. Special attention is given to vocational subjects and the work is considered excellent. The Home for Neglected and Dependent Children is on the outskirts of Waco. This was established in 1922, and the number of inmates has been small up to this time.

### The improperly adjusted boy or girl

Sometimes boys or girls come in conflict with the rules of society. Perhaps they do not like school and constantly play truant. Perhaps the parents are weak in will and do not control them. Perhaps a boy leaves home and "beats" his way from town to town. Perhaps a boy or a girl has actually broken some law for which an older person would be punished. If sent to jail and placed in contact with hardened criminals, such a child would probably come out worse.

# STATE TUBERCULOSIS SANATORIUM

Woman's Dormitory, No. 6.

Library and Moving Pictures.

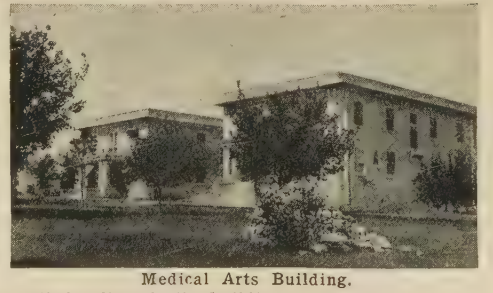
Dormitories for men, left and right; centre, office of superintendent.
Notice the enormous openings for light and air in these dormitories, and the attractive surroundings.

Men's Infirmary.

Nurses' Home.

One of the reasons the buildings are low is to prevent the necessity of climbing stairs.

Women's Infirmary.



Medical Arts Building.

There are several assistant physicians, who have their offices in the building on the right.

The State Tuberculosis Sanatorium at Carlsbad, Tom Green County, is one of the most useful institutions in the state. The bottom picture shows another dormitory for women.

Few of these children are really criminals, but many are on the way toward becoming criminals if they remain where they are. So the state may step in and place them where they will have better surroundings and proper discipline.

The two institutions for such cases are the State Juvenile Training School at Gatesville, for boys, and the Girls' Training School at Gainesville. In both schools, half the children are in school in the forenoon while the other half are working. In the afternoon the situation is reversed. Simple pleasures are allowed them, and most of them are much happier under strict discipline than they were roaming the streets. The legislature has provided for a similar institution for negro youths, but it has not yet been established. Meanwhile they are cared for at the Gatesville school.

The boys work on the farm and in various shops, learning some useful occupation by which they can earn their living when discharged. The girls also do some work on the farm and garden, and have work in domestic science. Many make excellent progress, and when paroled by the superintendents, after a period of good conduct, show the value of the training by becoming good citizens.

The Texas School for the Blind is at Austin. Both boys and girls are taken, and taught. They learn to read through the tips of their fingers, and some are prepared for college, where they often do well. Trades are taught and the work done by these young people is astonishing. Many are prepared for self-support, and become valuable citizens.

The Texas School for the Deaf is also situated in Austin, and admits those who because of defective hearing cannot be educated in the public schools. Half the day is spent in school and the other half in industrial training. Such training is given in tailoring, shoemaking, printing, sewing, millinery, domestic science and the like.

Provision for afflicted colored children is made at the Deaf, Dumb and Blind Institute for Colored Youths, which is situated in Austin. It is conducted in the same way as the two schools for whites already mentioned, except that both classes are in the same institution. The State Board of Control praises the management highly.

The State Home for Neglected and Dependent Children at Waco, together with some of the inmates.

# IMPORTANT STATE INSTITUTIONS

Main Building, School for the Deaf, at Austin. This institution was founded in 1857, and occupies a tract of 63 acres on the outskirts of the city. It has over four hundred pupils.

One of the buildings of the Rusk State Hospital for the Insane. This institution, opened in 1919, occupies a tract of 2,109 acres on the edge of the town of Rusk, Cherokee County.

The State Hospital for the Insane at Austin is the oldest, and for many years was the only institution for the care of the insane. There are now five in different parts of the state.

### TWO INSTITUTIONS WHICH WILL SOON BE CLOSED

Two other institutions dear to the heart of Texans will not be open many years longer. These are the Texas Confederate Home, and the Confederate Woman's Home, both located in Austin. The first named was established and maintained for years by citizens, and was taken over by the state in 1891. It is for veterans, though a few wives are in residence with their husbands. As the war ended in 1865, it is clear that the youngest veteran must be nearly or quite eighty years old. Many are in feeble health and spend most of their time in the hospital. Little can be done except to make their last years as comfortable and pleasant as possible. The Confederate Woman's Home was taken over by the state in 1911. Since many of the soldiers did not marry until after they had returned from the war, and often married women younger than themselves, the age of the widows is somewhat less than that of the veterans in the Confederate Home. Therefore many widows may be living when the last veteran has gone. Even so, it cannot be many years until these homes will no longer be needed for their present purpose.

All of the institutions just mentioned are under the general supervision of a commission of three members known as the State Board of Control. Another institution of great importance is under the control of the Regents of the University. This is the State Hospital for Deformed and Crippled Children at Galveston. It is really a part of a much larger hospital, managed by the Medical Faculty of the University. Here all is done that can be done for those unfortunate children whose progress in life is hindered or prevented by some bodily affliction.

In all the larger cities and in some of the smaller, the federated women's clubs support club houses, of which this in Waco is an excellent example. All these club houses are centres of enlightenment and social service, as well as affording opportunities for social intercourse.

Besides Church and State there are hundreds of other organizations. Texas people are great "joiners," and the membership runs into the hundred thousands. Nearly all the churches have organizations of laymen to carry on various activities. Others are primarily economic. Many are professional, some are patriotic, literary or artistic. There are fraternal and benevolent orders, civic associations, historical societies, and some whose purpose is amusement.

Very often it is difficult to draw a sharp line between these organizations. For example, Chambers of Commerce are organized primarily for economic pur-

# INSTITUTIONS FOR YOUNG AND OLD

The Masonic Orphans' Home at Fort Worth is a well-equipped institution in which the members of the order in Texas have shown great interest and considerable pride.

The Confederate Home in Austin cares for Confederate veterans, though a few women are usually in residence with their husbands.

The Confederate Woman's Home also in Austin, cares for the women of the Confederacy. In both of these Confederate Homes the inmates yearly grow less able to care for themselves.

poses, but very often they promote social welfare. Many other economic organizations also give money and support to social movements; and of course one of the chief purposes of the fraternal orders is the welfare of the community.

The oldest of all the societies in Texas is almost certainly the order known as Masons. Many of the earliest American settlers belonged to the order, and lodges were soon established. The present membership in Texas is large, divided between the American Rite and the Scottish Rite. State organizations working under the American Rite are the Grand Lodge, the Royal Arch Masons, the Grand Council and the Knights Templar. Masons of both rites give much attention to social welfare. Care for the unfortunate, the widow and the orphan is one of their fundamental principles. The Eastern Star is a closely affiliated order of women.

Next in age and in membership is the Independent Order of Odd Fellows, which has advanced degrees known as the Encampment, and also has an auxiliary woman's organization, the Rebekahs. The Odd Fellows distribute large sums in charity and social work, and have a large membership in the United States. There is an Odd Fellows Home in almost every state. Other secret orders of somewhat the same sort are the Knights of Pythias, the Elks, the Eagles, the Woodmen of the World, the United Workmen and perhaps others. All of these are much younger than the Masons and the Odd Fellows, and none has a membership anything like so large, either in Texas or in the United States as a whole. All of these do much social work.

Recently organizations made up of men of different occupations, who meet for luncheon or supper once a week, have become very popular. The best known are the Rotary, the Kiwanis and the Lions. While good-fellowship is one of the main purposes, in all of their meetings the idea of service to the community in which they live is emphasized. In many towns the welfare workers receive much sympathy and aid from them.

The Scottish Rite Cathedral in Dallas is the headquarters of this division of the Masonic Fraternity.

There are, as said above, many other organizations in Texas which are interested in social welfare, but perhaps no one is doing more than the Texas Federation of Women's Clubs. As its name implies, this is a federation of the many women's organizations in Texas, which in turn is a part of a nation-wide organization. There is hardly a town in Texas which has not been benefited by the work of these clubs.

These are only a few of the many organizations of various sorts which are making Texas a better place in which to live. Others perhaps are worthy of mention, but there are so many that this whole volume would not be large enough to give an account of them all.

Household Arts Building, Prairie View.

# THE NEGRO IN TEXAS

THE first Negroes were brought to Texas by Louis de Aury, who established a slave market on Galveston Island in 1816. With several ships he combed the waters of the West Indies in an effort to rob the slave ships coming to the Americas. By this method of piracy great numbers of Negro slaves were stolen and brought to Galveston Island and finally sold to slave dealers in Louisiana, particularly New Orleans. At this time Texas was not settled, and an outside market had to be found for the disposal of these slaves.

After 1808 the United States prohibited the shipping of slaves into this country, and it was necessary to smuggle them into Louisiana. In spite of the customs officers in and around New Orleans, several thousand slaves were brought in and sold. Jean Lafitte, the pirate, built the pirate town of Campeche on the present site of Galveston, and continued the enterprise. Ships were sent directly to Africa, and others were captured. Finally the slave traders became so bold that they actually sold slaves brought from Texas on the streets of New Orleans in defiance of the law.

The government began to enforce the law more rigidly, making it difficult to get slaves into Louisiana from Texas. The slave buyers in Louisiana would come to Texas and make selections of the number of Negroes wanted, but would not pay the agreed price until the slaves were safely delivered in New Orleans by the seller.

In 1818 the Bowie Brothers joined with Lafitte, and pushed the slave traffic with unprecedented vigor. Negro slaves were sold for one dollar a pound, making the average slave cost about $140. If the same slave had been purchased of a slave owner in the United States he would cost much more. Therefore, it was profitable for Louisiana to buy as many slaves from Texas as possible. To give an idea of the vastness of the annual volume of the slave traffic from Texas, the Bowie Brothers are said to have made a net profit of $65,000 between 1818 and 1820.

In the year 1821 the first cargo of slaves was actually sold into Texas. Prior to this time Texas was a vast wilderness, and there was no particular need of slaves. Stephen F. Austin at this time obtained a grant from the

Spanish Government to settle a colony of three hundred families. This first settlement was established at the present site of old Washington in Washington County. The fertility of the soil attracted slave owners from the United States to settle in Texas, where the returns from the labor of their slaves were tremendously enhanced. From 1821 to 1830 several men had secured concessions to establish colonies, and as a result the slave population reached approximately 5,000.

The emigrants to Texas from the States were permitted to bring their slaves with them, and some were purchased through Galveston Island before the settlement was broken up. As an inducement to the settlers to come to Texas, they were guaranteed the right to bring their slaves by the Mexican government.

Negro slavery seemed essential in the early development of Texas, in the clearing of the forests, the cultivation of cotton and rice. For the time being these early settlements centred around the Trinity, Sabine, Neches, Brazos and Colorado river bottoms. These localities had some of the most fertile soil in America, and the climate seemed peculiarly suited to the Negro, more so than to the white people.

### Growth of Negro Population

In 1830 it is estimated that there were 20,000 whites and 5,000 Negro slaves. A partial state census report of 1847 reflects the rapid increase of the population growth in Texas. In 1847 there were according to the state census:

| | |
|---|---|
| Whites | 103,841 |
| Negro slaves | 39,060 |
| Free Negroes | 304 |
| Total | 143,205 |

The United States census in 1850 revealed the growth of the population to be:

| | |
|---|---|
| Whites | 154,034 |
| Negro slaves | 58,161 |
| Free Negroes | 397 |
| Total | 212,592 |

Free Negroes lived in Texas during the days of slavery. In 1847 there were 304, and by 1855 this number had increased to 397. Some Negroes were emancipated by wills on the death of their masters; in some instances slaves were given freedom after working a number of years, and in other cases free Negroes were children born of Negroes who were free. Such Negroes were not desirable citizens in the eyes of the slave owners, because of the reaction their presence would naturally have on slaves.

### Slave Population and Cotton Production

Negro slavery developed from the beginning an intimate relationship with the cotton industry. The records of the State Comptroller's Office contain these astonishing figures, which show that, from 1850 to 1860, the increase in cotton production almost exactly kept pace with the increase in slaves. In 1850 there were 58,558 slaves, while in the same year the cotton crop was 58,072 bales; in 1855 there were 105,974 slaves, and the cotton production was 105,111 bales; in 1860 Texas had 182,566 slaves, and produced 182,627 bales.

It would be well to keep in mind that during the period ending with 1855, the Negro population in Texas was confined to 82 counties, with Harrison County outstripping the others with 7,013 slaves, while Cooke County had only one. From then until this day the Negro population of Texas has confined itself to three well defined areas in the eastern half of the state.

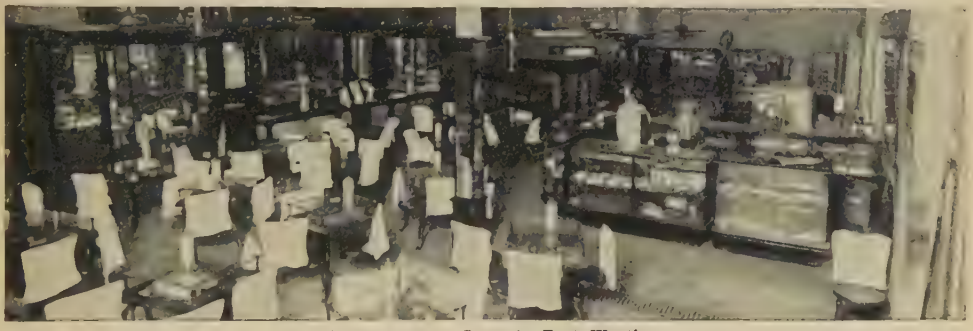
### Distribution of the Slave Population

In 1857 Northeast Texas contained 25,000 slaves, with Harrison, Bowie and Cass counties having most of this number. This fertile section developed into a great slave-holding territory, with cotton as its chief crop. The Red River offered not only rich soil, but advantages for transportation into Louisiana and New Orleans. Consequently, slave owners from the eastern states found it profitable to locate here.

East Texas was settled very rapidly, and in 1857, there were 34,800 white and 25,000 Negro inhabitants. But because of the early depletion of the productivity of the soil neither white nor Negro population increased as in the other two sections. The Sabine and Trinity rivers drain this portion of the state, and afford water connections into the Gulf of Mexico. While this division affords splendid opportunities for diversified agriculture, in recent years the lower southeastern portions developed the greatest lumbering industry in the Southwest.

In Central Texas communication with

Fraternal Bank and Trust Company, Fort Worth.



A Negro Drug Store in Fort Worth.

Farmers Improvement Bank, Waco.

the Gulf was made possible by the Brazos and Colorado rivers, which cut their paths almost through the entire section. This part of Texas is the oldest American settlement, and within its confines we have some of the most fertile soil in the world, as well as a salubrious climate. The lower portions produced rice, molasses and sugar, as well as cotton. The bulk of the Texas cotton crop finds its way to the markets through this area. In 1847 there were 36,600 slaves found here, and this number increased in a greater ratio than in the other sections.

### Present distribution of the Negro population

The bulk of the Negro population in Texas to-day is found still in the three divisions mentioned in the preceding paragraphs. In fact, the Negro population in Texas is largely restricted to the cotton and lumbering areas which are found in the eastern half of the state. The only noticeable shifting of this population is from rural to urban centres of these areas. The Negro has not been attracted to the vast, sparsely settled parts of the western half of the state.

The United States Census of 1920 reported 741,695 Negroes in Texas, constituting approximately 15.9 per cent of the total population. In 1850 the Negro population was nearly 28 per cent of the total. While the Negro population has actually increased enormously in seventy years, it has not increased so rapidly as the white, and the proportion of Negroes is much smaller than in 1850. While the birth rate is normal, in recent years Texas has not attracted large numbers of Negroes from other states as in former years. The trend of the migration of the Southern Negro in the last two decades has been toward Northeast, North and Northwest. In the future, therefore, the Negro population in Texas must increase from natural and normal sources.

The 1928 Texas Almanac estimates the Negro population of Texas for 1927 to be 857,123. These figures are based upon the scholastic population which is enumerated annually. There are 254 counties in Texas, but 77 of this number, which are located in the western portion of the state, have practically no Negroes. Dallas, Harrison and Harris counties are three important centres of Negro population, with 31,397, 26,858 and 42,734 respectively.

### Character of Negro population

The close of the Civil War found approximately 200,000 Negroes in Texas, and most of this number was on cotton plantations in the rural sections. Negro labor was most valuable and desirable on the farms, and only a few were used in the cities for domestic purposes and apprentices in the mechanic trades. But by 1890 there was a pronounced movement of Negroes from the cotton and rice fields to the cities. Therefore, the rural population has almost stood still, while the urban has increased. This rural exodus was hastened by the gradual depletion of the fertility of the soil in East Texas, the ravages of the boll weevil, the uncertainty of the cotton crops and prices. In other words, the one crop system was a leading factor in driving Negroes to the cities of Texas. Houston, Dallas, Fort Worth, San Antonio, Beaumont, Waco and Galveston contain half of the urban Negro population. In spite of these changes the Negro is still an important factor in the state's agricultural production. These figures from the United States Census Reports reflect light upon this interesting situation for Texas:

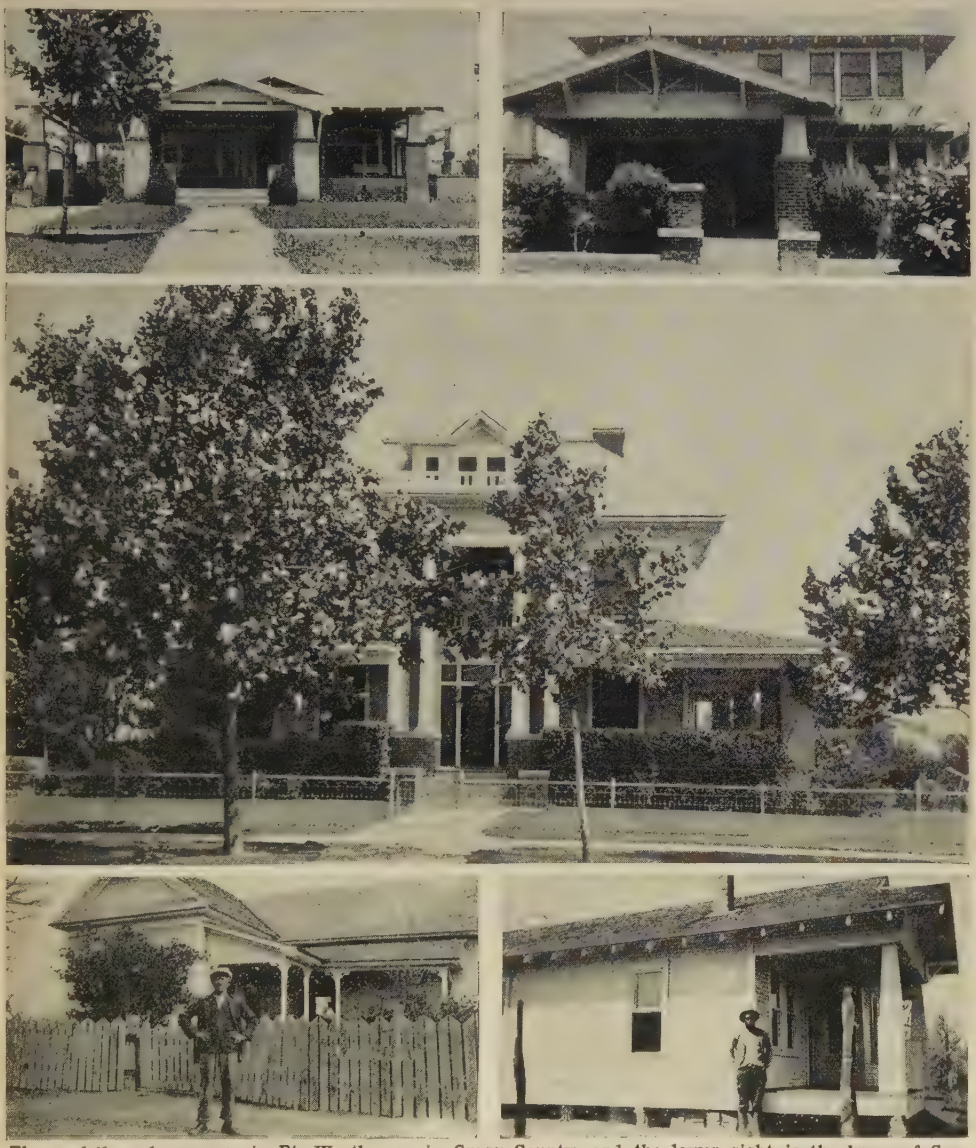
| | 1900 | 1910 | 1920 | 1925 |
|---|---|---|---|---|
| Negro Farmers | 65,472 | 69,816 | 78,597 | 81,726 |
| Negro Farm Owners | 20,139 | 21,182 | 23,519 | 19,841 |
| Negro Tenants | 45,242 | 48,554 | 54,945 | 61,840 |
| Per cent. Ownership | 30.2 | 30.3 | 30.0 | 24.3 |

Texas had, in 1920, a greater number of farms operated by Negro owners than any state in the Union with the exception of Virginia. The number of acres in these 23,519 farms was 1,793,127.

Comparative figures of urban and rural Negro populations in Texas for 1900, 1910 and 1920 reveal these interesting facts:

| | 1920 | 1910 | 1900 |
|---|---|---|---|
| Urban . . | 223,373 | 178,864 | 119,329 |
| Rural . . | 518,321 | 511,185 | 501,393 |

It can be observed from the above table, that from 1900 to 1920 the urban population increased 104,044, while during the same period the rural population increased only 16,928. In other words, the urban population practically doubled itself.



Three of these homes are in Ft. Worth, one in Gregg County, and the lower right is the home of Sam Deadman, mentioned in the text. While distinctly above the average of Negro homes in the state, they show that members of the race are prospering. The centre one might almost be called a mansion.

### Housing conditions in the cities

Poor housing and sanitary conditions in the city have been the most vexing problems of Negro urban life for years. White and colored races live in separate sections, and often white sections are developed, while in many instances the Negro sections are neglected. There are poor streets, poor sanitary accommodations, and an absence of many of the ordinary modern conveniences. Many residences are nothing more than unsightly cottages and shacks, and in these families live with as high as eight and ten members. In the rural districts, the housing conditions as a rule are inadequate in the same points as in the city. It must be said, however, that both rural and urban conditions are improving. Many Texas Negroes live in attractive homes, well-built and well-kept, as may be easily seen from the pictures at the top of this page.

### AGENCIES FOR SOCIAL BETTERMENT

Several agencies are at work to better the housing conditions of the Negroes. The Negro Extension, County and Home Demonstration Agents have had for their slogan in recent years, not only intensive and diversified farming, but improved living conditions. Gratifying evidences of substantial improvement as a direct result of these agencies are evident. Co-operating with these agents, the Jeanes Supervisors of rural schools and vocational schools have played a signal rôle in the general betterment of rural life. As a result the rural people are becoming encouraged and hopeful and are building and beautifying homes, producing more on less land, and at a lower cost; while they are being taught thrift and encouraged to buy property and educate their children. This same programme of improved conditions is carried on in the cities by clubs, Parent-Teachers' Associations, Mothers' Clubs, and the members of the Inter-racial Commission. On the whole, the economic, civic and social status of the Negro population in Texas has shown gradual and substantial signs of improvement, and there is every indication of continuous progress along all lines of racial betterment.

### THE DEATH RATE HIGH AMONG THE NEGROES

The mortality rate among Negroes in Texas has been greater than that of the whites, and especially is this true with infants. Lower wages, poor housing conditions, improper living conditions and ignorance are the chief contributing causes to this situation. Tuberculosis takes the heaviest toll of lives, followed by pneumonia and organic heart disease. Among Negroes in Texas there is a very capable man under the title of "Lecturer to Negroes," who gives his entire time to this work. In 1927 this worker "traveled 15,711 miles, visiting 156 places, giving 313 talks to 82,599 persons, and distributing 35,478 pieces of literature, together with very much other effective health work among the colored race in Texas." Many of the more progressive communities have full-time public health nurses for colored people, and the result of all of these agencies is a noticeable decrease in the death rate. As elsewhere in the United States, Negro mortality is greater in the city than in the country.

### NEGRO HEALTH WEEK OBSERVED EVERY YEAR

With a view of improving general health conditions, Tuskegee Institute, Tuskegee, Alabama, has sponsored what is known as the "National Negro Health Week," which is observed by all Negro communities. In Texas all agencies, forces and organizations, active in the programme of racial improvement and progress co-operate in a sympathetic way in making this week effective. The State Department of Public Health and public-spirited white citizens lend every assistance in reaching every community for the Health Week, which is the first week in April. Every community unites in a programme like this: Mobilization Day, Home Hygiene Day, Community Sanitation Day, Children's Health Day, Adult Health Day, Special Campaign Day and General Clean-Up Day. Every church, school, college and club is used as a centre in directing the effective execution of this programme of better health.

### HOW TEXAS NEGROES MAKE THEIR LIVING

The Negro people make up a great army of the unskilled laborers of Texas. The Texas Educational Survey Report for 1924 found that in the mechanical industries only 2.3 per cent were skilled workers. These tables show the occupations of the Negro population of Texas:

MALE WORKERS

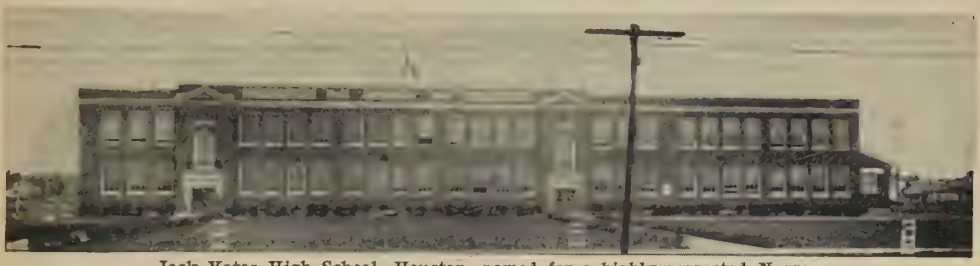
| OCCUPATION | NUMBER | PER CENT |
|---|---|---|
| Agriculture, forestry | 131,062 | 57.6 |
| Extraction of minerals | 674 | .3 |
| Manufacturing and mechanical industries | 41,794 | 18.4 |
| Transportation | 20,505 | 9.0 |
| Trade | 8,222 | 3.6 |
| Public service | 2,165 | 1.0 |
| Professional service | 3,349 | 1.5 |
| Domestic and personal service | 18,651 | 8.2 |
| Clerical occupations | 955 | .4 |
| Total | 227,377 | 100.0 |

FEMALE WORKERS

| OCCUPATION | NUMBER | PER CENT |
|---|---|---|
| Agriculture, forestry | 42,263 | 40.7 |
| Manufacturing and mechanical industries | 3,958 | 3.8 |
| Transportation | 178 | .2 |
| Trade | 457 | .4 |
| Professional service | 3,284 | 3.2 |
| Domestic and personal service | 53,477 | 51.4 |
| Clerical occupations | 292 | .3 |
| Total | 103,909 | 100.0 |

# A MODEL HIGH SCHOOL FOR NEGROES

Class in Domestic Science in Jack Yates High School.



Jack Yates High School, Houston, named for a highly respected Negro.

Science class in Jack Yates High School. Only a few years ago there was not a single public high school for Negroes in the state. Now there are more than forty.

The significant points in the above tables are that a majority of Negro male workers are engaged in agriculture of some nature, and the female workers are engaged in domestic and personal services. Among the professional workers, male and female, are classed the clergy, teachers, physicians, dentists, nurses, lawyers and welfare workers, and the like. If a majority of the Negro population is composed of unskilled laborers, they must necessarily get the wages of unskilled laborers.

### Some Negro Farmers are Successful

While most of the Negro farmers are tenants who accumulate little property and have few of the comforts or luxuries of life, there are some striking exceptions. One county agent reports several instances of prosperous farmers who have come to his notice. One, Tony Pittman, born a slave, rented a piece of land in 1866, and at the end of the year was able to buy a team. He continued to rent until 1904, when he was able to buy 120 acres. In 1928 he had 526 acres worth perhaps $50,000 and much other property besides. He had four tenants and four hired men, and was said to average $4,000 net from his farm.

Thomas Joshua, of Victoria County, returned 3,589 acres of land for taxation, assessed at $179,495 and is proud to own the little hut in which he lived as a slave. A farmer in Polk County sold a part of his land for $84,000 and has 840 acres remaining. A younger man, Sam Deadman, of Harrison County, had a wife and three dollars at the age of twenty-one. Now he owns 767 acres of land assessed at about $30,000, and has other property. While of course such cases are exceptional, regardless of color, they do show that it is possible for a Negro farmer to prosper.

### Business Enterprises Conducted by Negroes

In the field of business the Negro population has not ventured very far. Several banks have been organized, but to-day—1928—there are only two, one in Waco and the other in Fort Worth, Texas. The cause of these bank failures was not a question of dishonesty, but lack of experience and technical training. However, fraternal lodges have flourished, and they have hundreds of thousands of dollars of assets. Splendid brick buildings for headquarters, office and business, have been erected at considerable cost in Fort Worth, Dallas, Houston, Beaumont and San Antonio. There are 22 well furnished drug stores in the more prominent cities, which do a lucrative annual business. In grocery and dry goods stores little has been accomplished, but moving picture ventures have been a little more successful. In the newspaper field there are eight sheets, and one well-edited monthly magazine, and all enjoy a wide circulation. The other Negro businesses would include barber shops, pressing and tailoring shops, boot-blacks, restaurants and public lodging houses.

### The Law Formerly Forbade Teaching Negroes

It was against the law in all of the slave states to teach a slave to read. Even if a Negro were caught trying to learn he was punished. The free Negroes suffered in the same way. But in spite of these stringent laws forbidding giving instructions to slaves, occasionally some of the more sympathetic white people violated the law, and taught Negroes they liked to read and write. Therefore, when freedom came in 1865, a few of the 4,000,000 Negroes in the United States could read and write.

### The Beginning of Negro Colleges

In order that the newly emancipated slaves might be prepared to assume the duties and responsibilities of American citizens, it was necessary to fortify them to meet these new problems. Various organizations in the North established schools and colleges for Negroes in strategic points in the South. Such organizations as the American Missionary Association, the Baptist Home Mission Board, the Freedman's Aid Society, and the Presbyterian Mission Board soon after the Civil War established schools in practically every section of the slave states. In the meanwhile, some of the independent Negro churches began to raise money to establish schools.

There were nine colleges for Negroes in Texas in 1927, with an enrollment of 1,818 in college classes and of 2,368 in high school classes. The total number of instructors was 309, the total income $763,132, and the value of all property was $4,135,182. Of these institutions four are recognized as senior colleges by the Department of Education. They are

Wiley College, the oldest, founded in 1873, Prairie View State College, founded in 1879, Bishop College (1881) and Samuel Huston College (1900). Tillotson College (1881), Paul Quinn (1881), Guadalupe College (1884), Mary Allen Seminary (1887) and Texas College (1895) were approved Junior Colleges.

### THE LIMITED INCOME OF NEGRO COLLEGES

It will be noted that the enrollment in high school classes was greater than that in the college classes. However, it should be kept in mind that in 1913 there were in Texas only 111 Negro college students, and that in 1927 there were 1,818. In 14 years there has been a tremendous increase of college students. One reason for the fact that the Negro colleges are still burdened with a heavy enrollment of secondary students is that the state was tardy in providing high school instruction. As a consequence, this class of schools filled this important need. But since the State of Texas is now providing—not amply—for high school education for children of colored citizens, the enrollment in the college departments has increased proportionately. In fact, several of these colleges have begun to eliminate their high school divisions.

Since the annual income from all sources is $763,132 for the instruction of 4,186 pupils, it must be the conclusion that some of this college training cannot be in accordance with high standards. This discrepancy becomes more glaring if we take out the annual income for the state school, which is more than one-half of the total income for all of the other schools, with approximately one-fourth of the total enrollment. The present determination of Negro colleges in Texas to meet the standards has already caused several so-called colleges to drop by the way, and, unless there is a substantial increase in the income, more must be forced to discontinue operation.

Negro School at Timpson, Shelby County.

Negro School at Mt. Pleasant, Titus County.

### THE STORY OF NEGRO PUBLIC SCHOOLS

In 1870 the state legislature made the first provisions for Negro public schools. Colored children have suffered severely from the unequal distribution of school funds, poor teachers, short terms of school, poor school houses and facilities. According to the tables compiled by the Educational Survey the expenditure for teaching each colored child was less than half that spent for a white child; the average number of pupils to each colored teacher was 46, compared with 33 for

the white; the average salary paid was $916.02 for whites as against $487.03 for colored; the average length of term was 140 days for whites and 126 days for colored.

The training of Negro teachers is inadequate. There were 4,003 teachers in the public schools in 1927. Only 510 were graduates of four-year colleges, 1,201 were graduates of state normals, 1,113 were graduates of high schools, and 1,179 had graduated from no school. However, it is a hopeful sign that 2,110 of these teachers spent, in the summer of 1927, a minimum of three months studying in Texas colleges. The local school authorities are demanding better-prepared instructors for Negro children.

Taking all the difficulties and deficiencies into consideration, it is not surprising that over 60 per cent of the Negro children enrolled are registered in the first three grades. In 1924, it was found that in the smaller districts in the state 109,408 colored children were enrolled, but there were only 57,715 seats. Mention is also made of inadequate lighting and equipment. In 104 counties the school term was short—in nearly one-third of the schools only five months or less. Then too there is the problem of irregular attendance. About 30 per cent of the children are out of school all of the time. One cause of the short term is the fact that in many counties the Negro population is sparse.

In order to secure satisfactory teachers in many country districts, school authorities have found it necessary to build comfortable homes for the teachers, white and colored. The top and bottom pictures show a home in Van Zandt County with a glimpse of the school. The centre pictures are from Bowie and Camp Counties.

### TEXAS LEADS IN NUMBER OF HIGH SCHOOLS FOR NEGROES

While the picture of the status of the public schools for Negroes in Texas may appear gloomy, yet unbelievable changes are taking place for the better. To-day Texas is ahead of all the states in the number of Negro High Schools. There are forty Negro High Schools of standard grade, with an enrollment for 1926–27 of 13,067, an increase of 110.5 per cent over 1921–22. The total number of Negro scholastics for 1926–27 was 228,460.

Texas supports only one college for the higher education of her colored citizens, and that is Prairie View State College, Prairie View, Texas. This is the largest Land Grant Colleges for Negroes, from points of physical plant and enrollment, to be found in America. In 1926–27 it enrolled in its regular session 1,100 students; summer session of 1927, 1,300 teachers, and 1,600 farmers for the short course. The last Legislature made an appropriation of $536,420 for this biennium. This appropriation has been supplemented by a gift from the General Education Board of New York of $100,000, which will enable the institution to carry forward a building and improvement programme of $360,000.

The radical changes in the education of the Negro citizens have been influenced by such agencies as: (1) the General Education Board; (2) the Anna T. Jeanes Foundation; (3) the Smith-Hughes Fund; (4) the Julius Rosenwald Fund; (5) the John F. Slater Fund. The above named educational agencies working through, and in co-operation with, the State Department of Education of Texas and the local authorities are responsible for a revolution in the forward movement in the education of the Negroes of Texas. Modern buildings and equipment, longer school terms, better pay for teachers and better prepared teachers are on the constant increase in Texas, and with this pace it is predictable that the state will lead in the near future, other Southern States in educational opportunities for Negroes. In 1910 the percentage of illiteracy of the Negro population in the state was 24.6, while in 1920 it had fallen to 17.9 per cent.

### THE PROBLEM OF THE NEGRO CHURCH

Of the 741,695 Negroes there are 355,450 members of some church. The Baptist church leads all of the denominations in members, followed in order by the African Methodist Episcopal, Methodist Episcopal, Colored Methodist Episcopal, Holiness, Christian, Episcopal, Presbyterian, Congregational and Catholic. These churches have some magnificent houses for worship, well located in the cities of the state. In consequence of the rapid spread of the Negro to the North, East and West, due to the migration of recent years, the Southern church has been robbed of most of its prepared ministry to fill the pulpits in other fields which pay better salaries. The Southern church, therefore, is suffering for a more progressive leadership, because of the loss of so many of the strong ministers.

The 355,450 members of the Negro churches are overchurched; particularly is this true with the Baptist and Methodist denominations. There are too many churches endeavoring to do work in the same territory; this church rivalry has thrown each congregation under heavy debts. But in spite of this adverse criticism much good has been accomplished for the Negro population through various church organizations along the lines of right living, education and citizenship.

### THE PROBLEM OF RELATIONS BETWEEN THE RACES

The freeing of the Negro and the methods by which it was done brought into existence in all of the Southern States a vexing and acute problem which is popularly known as the "Race Problem." After years of experimentation, theorizing, talking, writing and legislating, some level-headed men and women of both races a few years ago met in Atlanta, Georgia, and organized what is known as the Inter-racial Co-operation Commission, which has for its objectives the working and ironing out of the difficulties that tend to keep alive racial antipathies. The two races are trying to adjust themselves to this delicate situation through a common sense and scientific approach in changing the attitudes of both races toward each other. No movement since the landing of the first cargo of slaves at Jamestown, Virginia, in 1619 has moved and worked more effectively toward a harmonious and mutual understanding, than the Inter-racial Co-operation Commission. There are genuine signs of sincere good will between the races.

# WHERE THE GOVERNOR WORKS AND WHERE HE LIVES

**The Capitol, built of Texas granite, was begun in 1883 and completed in 1888. It contains the legislative chambers and many state offices. The state paid three million acres of land to the builders. The Governor's Mansion is considerably older as it was completed in 1853. Governor Dan Moody was elected in 1926 and re-elected in 1928.**

Photograph of Capitol, copyright by the Jordan Co., Austin, Texas; mansion also by Jordan; Gov. Moody by The Elliotts.

Court House, Tom Green County, San Angelo.

# THE GOVERNMENT OF TEXAS

## THE EARLY GOVERNMENT OF TEXAS—UNDER SPAIN

A LONG time ago Texas belonged to Spain, and the first government Texas ever had was that provided by Spain. Spain was ruled over by a king. "New Spain," that is all the northern territory in the "new world" discovered by Columbus and claimed by Spain, was ruled over by a viceroy, who was appointed by the king and could be removed at any time he might displease his royal master.

New Spain was divided into a number of smaller divisions called provinces (*gobiernos*). Over each of these provinces the king appointed a governor, who was subordinate to the viceroy, though appointed by the king. Texas was a province of New Spain during the greater part of the period from 1690 to 1821, and during this time she had twenty-four Spanish governors.

The chief towns of each province were allowed separate local governments. During the period of Spanish control there were three such towns in Texas. These towns were San Antonio, Nacogdoches and Goliad. The chief official of the town government was the alcalde. His duties were similar to those of an American mayor. In addition he performed the duties of city judge. This office is still in existence in Mexico.

Texas next belonged to Mexico, and her government while under Mexico was slightly different from what it had been under Spain. Under Spain Texas had been governed as a separate province, but under Mexico, she was joined to the Mexican State of Coahuila, thus forming a single state within the Republic of Mexico. The new state was enormous in size, but the population was sparse, with different interests.

Texas and Coahuila adopted a constitution in 1827. This constitution provided for a legislature, a governor, a vice-governor, and a system of courts which were inferior to the courts of the central government. The legislature consisted of only one house of twelve members. The governor, vice-governor and members of the legislature were all elected by the people.

The relations between Texas and Coahuila were never satisfactory. The Texans were principally Americans and Europeans who had come to Texas as colonists with Stephen F.

Austin, Hayden Edwards, Green DeWitt, Benjamin R. Milam, David G. Burnet and other contractors who had been given large tracts of land in Texas for bringing in colonists.

When conditions became unbearable the Texans revolted, and won their independence from Mexico. The Texans declared their independence on March 2, 1836, and on March 16 a constitution for the Republic of Texas was proposed, and was ratified by the people by popular vote on the first Monday of September, 1836. After the famous battle of San Jacinto, on April 21, 1836, Santa Anna, the President of Mexico, was forced to sign a treaty of peace between Texas and Mexico, on May 21, 1836. This treaty recognized the independence of Texas. The ratification of the constitution by the people in September, 1836, established the Republic of Texas. The independence of Texas was soon recognized by the United States and several other nations.

The government of the Republic of Texas was very similar to that of the United States. Texas had a president, a congress and a judicial system composed of a supreme court and several inferior courts. The president was elected by the people for three years and the legislature was divided into two houses called the senate and the house of representatives. The members of both houses were elected by the people.

### THE FIRST CONSTITUTION OF THE STATE OF TEXAS

Before Texas could become a state in the Union, it was necessary for her to have another constitution. This was not because she did not already have a good one, but because she was ceasing to be wholly independent and was assuming a new relationship in a federal union. She had to have a constitution which would not in any way conflict with the Constitution of the United States, any of its laws or any treaty between the United States and a foreign country.

The Constitution, laws and treaties of the United States are a part of the law of every state, and they are the supreme law of the land. No state constitution or laws passed by any state legislature or city council can conflict with the supreme law of the land.

This does not mean that the state governments are subordinate to the national government in everything. Some things which the states may do are denied to the national government. Then there are some things which can be done only by the national government. The national government has the power to declare war, to make treaties, to coin money, to regulate interstate commerce and to maintain an army and a navy. These powers may not be exercised by the states. The Federal Government is supreme then in some things. Now the states have the power to say who shall marry, who may be divorced, who may vote and who may engage in certain trades and professions. The state builds roads and bridges, it regulates the labor of children, it provides schools and colleges, it regulates most of the public utilities, such as electric lights, motor busses, water and sewerage systems, street cars and express companies. There are many things which the state governments may do just as they please, for in these things they are supreme. Now you can see why Texas had to have a new constitution although she already had a good one.

The constitution adopted by Texas in 1845, when she entered the Union, was simply a revision of the Constitution she had while she had been an independent republic, so that it would not conflict with the supreme law of the land. It was changed to provide for a governor instead of a president; the parts of the constitution dealing with the war power, treaty making and foreign affairs were no longer needed, for they were taken care of by the national government.

The constitution was not very long. It contained only thirteen articles, but each one of them covered a very important subject. One article said that the people possessed a number of rights which the government should not deny them. The constitution guaranteed that the people should have the right to worship God freely; they should have freedom of the press and free speech. The right to a trial by jury could not be denied. They could not, according to the constitution, be placed in prison for debt.

The powers of the government were separated into three divisions, just as they had been separated during the days of the republic. The governor was elected by the people, and like the President of the United States, he appointed

the other executive officials. The judges of the courts were also appointed by the governor at first, but in 1850 the constitution was amended and the governor lost this power. Popular election of the judges was substituted for appointment by the governor.

Texas joined the Confederate States of America, and had to change her constitution again in 1861. The Constitution of 1861, under which Texas lived during the war, was the Constitution of 1845, with the preamble slightly changed.

At the close of the Civil War the reconstruction programme of Congress forced Texas again to change her constitution in order to assume again proper relations with the government of the United States. This is known as the Constitution of 1869.

Unlike other states Texas had the control of the public lands, and this building, known as the Old Land Office, was long the headquarters of the land department. O. Henry once worked here and his desk may still be seen. The building is now a museum under charge of the Daughters of the Republic and the Daughters of the Confederacy, and contains many interesting items relating to Texas history.

The people of Texas did not like the Constitution of 1869, because it did not represent their will. A constitutional convention called to meet in Austin in September, 1875, drafted the present constitution, known as the Constitution of 1876, which was ratified by the people on February 15, 1876.

This Constitution may be divided into four divisions, the first of which is the preamble, which reads as follows: "Humbly invoking the blessings of Almighty God, the people of the State of Texas do ordain and establish this Constitution."

In the second division the people of Texas have named a number of rights that their government cannot deny them. The Bill of Rights, as it may be called, is very similar to the Bill of Rights contained in the first ten amendments to the Constitution of the United States.

The third division deals with the powers of the government and the fourth with how the document may be amended. We shall first notice how the Constitution may be amended and then find out how the general powers of the government are distributed.

The Constitution may be amended according to instructions found in the last article. The amendment is first proposed by the Legislature and then voted upon by the people. Amendments may be proposed at any biennial session of the Legislature; there it must receive a favorable vote of two-thirds of all the members elected to each House. The proposed amendment must then be published in some newspaper in each county

once a week for four weeks, beginning at least three months before the election. If a majority of the people who express an opinion on the amendment favor it, the amendment must then be proclaimed a part of the Constitution by the Governor.

### The distribution of the powers of the government

The powers of the government are exercised by three departments, called the Legislative or law-making department, the Executive or law-enforcing department and the Judicial or law-interpreting department. This distribution of powers has been made by the people, and the powers delegated to each of these departments cannot be exercised by any one of the other departments.

For the purpose of local government in Texas, there are the city and the county. The county is a subdivision of the state and the city is regarded as an agent of the state. The government of the county and city will be more fully discussed after we have learned how the central government operates.

### Some specific provisions of the constitution: suffrage

The following classes of persons are not allowed to vote in Texas:

1. Persons under twenty-one years of age.
2. Idiots and lunatics.
3. All paupers supported by any county.
4. All persons convicted of any felony.
5. All soldiers, marines and seamen employed in the service of the army or navy of the United States.

All other persons who are citizens of the United States, who have attained the age of twenty-one years, may vote in Texas, provided they have lived in the state one year next preceding an election, and the last six months within the district or county in which such persons offer to vote; and provided, further, that a poll tax was paid before the first day of February next preceding such election.

There are many provisions in the Constitution in regard to schools and charitable institutions, which you will find discussed in other chapters of this book. Turn to the chapters on the schools and colleges and you will find that Texas has made provision for a great free public school system from kindergarten to university. Texas has also made provision for her unfortunate people, those who are deaf, dumb, blind, epileptic, and for the insane. There are also jails, reformatories and penitentiaries for those who violate the laws of the state.

### The law-making department under the constitution

The Legislature of Texas is composed of two Houses, a Senate and a House of Representatives. There are thirty-one senators and one hundred and fifty representatives. The state is divided into thirty-one senatorial districts and one hundred and twenty-seven representative districts.

Senators and Representatives are elected by popular vote of the qualified voters of their respective districts. Senators are elected for a term of four years, while Representatives are elected for only two years. One half of the senators are elected every two years, so that the senate may be kept in close touch with the will of the voters.

The qualifications of senators and representatives are much alike. A senator must be at least twenty-six years of age, but a representative need be only twenty-one years of age. They must both be citizens of the United States, and must be qualified voters at the time of their election. A senator must have been a resident of the state for five years immediately preceding his election, the last year of which must have been spent in the district from which he is chosen. A representative must have been a resident of the state only two years immediately preceding his election, the last year in the district from which he is elected.

The Legislature must hold a session every two years, usually in January and February of the odd-numbered years. The Constitution limits the regular sessions of the Legislature to sixty days but it may stay in session longer with reduced pay. There may also be one extra session of thirty days. This may be called by the Governor when there is something that he thinks should be considered before the next regular session. The Governor names the subjects which the Legislature may consider at these extra or special sessions.

### Salaries and officers of the houses of the legislature

Senators and representatives receive the same salary, which is five dollars per day for the first sixty days of each

regular session, and two dollars per day for the remainder of the session. They also receive twenty cents for each mile traveled in going to and returning from the capital to attend the meetings of the Legislature.

The presiding officer of the Senate is the Lieutenant-Governor, who is elected by the people at the same time the Governor is elected. The Senate elects its other officers, among whom are a President *pro tem.*, who presides over the Senate when the president is absent; a secretary; sergeant-at-arms; doorkeeper; librarian, and chaplain.

The House of Representatives elects all of its officers, the more important of whom are the speaker; doorkeeper; chief clerk, and sergeant-at-arms. The Speaker of the House of Representatives corresponds to the President of the Senate. Their duties are to preserve order, enforce the rules of procedure, and in case of tie votes to cast the deciding vote.

The business of the Land Office is no longer so large as formerly, and it now shares this State Office Building with the State Highway Commission, the work of which has enormously increased. Texas is building improved highways very rapidly. Pictures of some of these smooth hard roads are shown in another place, and thousands of miles more are yet to be built.

### THE POWERS AND DUTIES OF THE LEGISLATURE

Each House of the Legislature is the judge of the qualifications and election of its members. It may also determine the rules of its own proceedings, punish members for disorderly conduct, and with the consent of two-thirds of its members, expel a member. Each House must keep and publish a record of its proceedings. This record is called a Journal. The record is published so that the people may see what their representatives are doing and how they vote on important questions.

Members of the Legislature are privileged from arrest during the sessions of the Legislature, and in going to and returning from the same, except in cases of treason, felony or breach of the peace.

The power of impeachment is vested in the House of Representatives. This House prefers charges of impeachment against the judges of the courts and the executive officers when they are guilty of misconduct in their offices. The Senate sits as a court to try the persons impeached by the House.

It is the duty of the Legislature to make necessary laws for the farmers, bankers, lawyers, doctors, preachers, cities, towns and counties. It must levy taxes to provide money for the running expenses of the government and for salaries. It sometimes has to borrow money. The Legislature makes laws,

regulating almost every kind of business enterprises. It must also provide schools, bridges, roads, charitable institutions and preserve law and order. The Legislature has the power to regulate the suffrage, the manner of holding elections, public utilities, such as railroads, electric lights, street railways and motor buses. The Legislature always has a great amount of work to do.

### Some prohibitions on the legislature and its members

The Legislature cannot pass local and special laws. It cannot pass laws that violate the "Supreme Law of the Land" or the State Constitution. The Legislature has no power to release a corporation or an individual from its obligations to the state or to any county or city. Debts cannot be made by the Legislature except to supply casual deficiencies of revenue, to repel invasion, to suppress insurrection, to defend the State in war and to pay existing debts.

There are several prohibitions on the members of the Legislature. The most important of these are the following: No member can hold a civil office which carries a salary or fees during his legislative term. No member can be elected or appointed to a civil office which was created, or the emoluments of which were increased, during his legislative term. No member can be interested in any contract with the state, or in any contract authorized by any law enacted during his legislative term. When a member moves his residence from the district which he represents, his seat in the Legislature becomes automatically vacant.

### The governor of texas—qualifications for the office

The chief executive officer of Texas is the Governor. It has been decided that this office may be held by women, as well as men. Texas has had, however, only one woman governor. The Governor must be a person who is at least thirty years of age, a citizen of the United States, and a resident of Texas for five years next preceding his election.

The Governor of Texas holds the same position in the state as the President of the United States holds in the nation. His position enables him to have a great deal of influence over the people of the state. He is frequently called upon to make speeches. In fact, every community in the state that has an important occasion invites the Governor to come and make an address. The Governor is really held responsible, by the people, for the management of the affairs of the state. The people of Texas expect too much from their Governor in this respect, as we shall see, for the people insist on electing several of the most important executive officers, as the Attorney General, Treasurer, Comptroller of Public Accounts and the Superintendent of Public Instruction. In the Federal Government these officers are appointed, and together they are called the President's Cabinet.

### Nominations for office are made at the primary election

The Governor is elected by popular vote of the people. He is usually a party man, and all political parties in Texas that have one hundred thousand members or over must nominate their candidates for the various offices in a Direct Party Primary. This primary election or nomination is held in July of the even-numbered years. To receive the party nomination a person must receive a majority of all the votes cast in this election by his party. It sometimes happens that there are three or more candidates for the party nomination, and no one receives a majority of the votes of his party. When this occurs, a "run-off" or second primary election is held in August. At this time only the names of the two candidates who received the highest vote are printed on the ballot. The people then choose between these two.

In November a general election is held, at which time the people elect the Governor, choosing this time between the party nominees. For a long time the Democratic party has had a great majority in Texas and the Governors have all been Democrats. It happens then that the person who secures the Democratic nomination for an office in July or August is always elected. There are, however, hot fights between different factions of the Democratic party for control of the various executive offices.

The new Governor is publicly installed in office in January after his election in November. The ceremony takes place at the Capitol building in Austin, Texas, usually in the hall of the House of Representatives, but sometimes the ceremony is held on the lawn in front of the building. This is always a great day for the

The experimental farm at Weslaco is charged particularly with investigations of vegetables and fruits. It tests the desirability of varieties, studies insect and other pests, and seeks to determine the best methods of cultivation under State and local climatic and soil conditions.

The station at Chillicothe, Hardeman County, is maintained jointly by the state and the U. S. Department of Agriculture and is particularly devoted to the study of forage crops. In the picture two new grain sorghums are being tested. On the left of the stake is sagrain, with schrock on the right.

Photographs, courtesy Missouri Pacific R.R. and Farm and Ranch.

Governor and his friends. The oath of office is administered to the Governor by the Chief Justice of the Supreme Court. This oath obligates the Governor to perform the duties of the office of governor, according to the best of his skill and ability, in harmony with the Constitution and laws of both the United States and the State of Texas. The salary of the Governor is four thousand dollars per year. In addition he is furnished a residence free of charge.

### THE POWERS AND DUTIES OF THE GOVERNOR OF TEXAS

The Governor is commander-in-chief of the military forces of the state; he is charged with the strict enforcement of all the laws of Texas and of the United States; he is the representative of the people of Texas in all business matters with other states and with the United States. The Governor has the power to call the Legislature together for special sessions whenever he thinks there is something that demands immediate action. At these special sessions the Governor names the subjects which the Legislature is to consider. If he is really the leader of his party and has the influential newspapers of the state behind him, he can usually induce the Legislature to accept his measures.

The appointing power of the Governor is very large. He has the power to appoint the members of numerous boards and commissions besides a host of single officials and Notaries Public.

The Governor may pardon persons who have been so unfortunate as to have been convicted in the courts for crimes against the laws of the State. He may also grant reprieves, remit fines and decrease punishments.

Acts of the Legislature may be vetoed by the Governor. He has ten days in which to consider a "bill" after it has been passed by the Legislature, not counting Sundays and holidays. The Governor of Texas also has the "partial veto;" that is, he may veto a part of a bill. He has twenty days at the close of a legislative session to consider the acts of the Legislature.

All vacancies in State or district offices except members of the Legislature may be filled by appointment by the Governor, unless otherwise provided for by law. These appointments must be approved by the Senate by a two-thirds vote.

### OTHER EXECUTIVE OFFICERS ELECTED BY THE PEOPLE

The people of Texas elect by popular vote, in addition to the Governor, a Lieutenant Governor, Attorney General, Treasurer, Commissioner of the General Land Office, Superintendent of Public Instruction, Comptroller of Public Accounts, Commissioner of Agriculture and three Railroad Commissioners.

All of these officers except the Railroad Commissioners, who serve for six years, are elected for two years in the same manner as the Governor. The salaries of most of them are stated in the Constitution and none of them is over four thousand dollars.

The Lieutenant Governor is President of the Senate and may act as Governor when the Governor is out of the State or is unable to act.

The Attorney General represents the State in all suits and pleas in the Supreme Court of the State, in which the State may be a party. It is his special duty to see that private corporations do not violate the provisions of their charters. He is also required to give legal advice to the Governor, other executive officers and members of the Legislature upon request.

It is the duty of the Treasurer to keep a record of the income and expenses of the State and to pay out money when properly ordered by law.

The Comptroller's department, headed by the Comptroller of Public Accounts, must approve all orders for money directed by law to be paid by the State Treasurer.

The Commissioner of the General Land Office keeps all records, papers and maps pertaining to land titles.

It is the business of the Commissioner of Agriculture to help the farmers all he can. He studies the soil to find out what crops will grow best in it. He must study the diseases of plants and animals. He must encourage the raising of hogs, sheep, horses, mules, fowls and fish.

The State Superintendent of Public Instruction has charge of all the business relating to the public schools of the State.

The people elect three Railroad Commissioners, one every two years for a term of six years. The Commission makes the rates, charges and rules that govern railroads in Texas, both freight and passenger. The Commission also has charge of railway express companies and motor

busses. There is no Public Utilities Commission in Texas, but the tendency is to place the supervision of them in the hands of the Railroad Commission.

### Principal officers appointed by the governor

The most important of the executive officials appointed by the Governor are as follows: Secretary of State, Banking Commissioner, Commissioner of Insurance, State Reclamation Engineer, Labor Commissioner, Adjutant General, State Health Officer, State Tax Commissioner, and Game, Fish and Oyster Commissioner.

These officials are appointed for two years, and their appointment must be confirmed by the Senate. Their salaries range from two thousand five hundred to six thousand dollars. Their duties are indicated by their names, so it is not necessary to describe each of the offices in detail. We shall, however, notice two or three of them.

The Secretary of State is a very important officer, for he must keep a complete record of the official acts of the Governor. He keeps the Seal of the State and he uses it under the direction of the Governor. All commissions are sealed with the State Seal, signed by the Governor, and attested by the Secretary of State. He places the seal upon all state papers. His department supervises the publication of the state laws and he distributes copies of the Journals of the Houses of the Legislature to the Governor, heads of departments, members of the Legislature and county judges.

### Boards and commissions appointed by the governor

In addition to these single officials the Governor is required to appoint numerous boards and commissions as special agents of the state. These agents are performing valuable service to the people of the state.

In 1919 the Legislature of Texas abolished a large number of officers and boards and created a new board called the State Board of Control to take over their duties. The officers and boards abolished were: (1) State Board of Public Printing, (2) State Expert Printer, (3) State Purchasing Agent, (4) State Board to Advise with the Purchasing Agent, (5) Superintendent of Public Buildings and Grounds, (6) Inspector of Masonry, Public Buildings and Works, and (7) Boards of Managers for the following State institutions: Confederate Home, Confederate Woman's Home, Deaf and Dumb Institute, Deaf, Dumb and Blind Institute for Colored Youths, Epileptic Colony, Farm Colony for the Feeble Minded, Girls' Training School, Juvenile Training School, Orphans' Home, Pasteur Institute, Texas School for the Blind, Texas Tuberculosis Sanatorium, and all the State Hospitals for the Insane.

The work of the Board of Control is organized into six main divisions as follows: (1) Division of Public Printing,

Roads are built both by the state and the counties.

(2) Division of Purchasing, (3) Division of Auditing, (4) Division of Design, Construction and Maintenance, (5) Division of Estimates and Appropriations, and (6) Division of Eleemosynary Institutions.

The duties of the Board of Control are very numerous. As purchasing agent for the state, it purchases all supplies used by the departments of the state government, state colleges, the University of Texas, and all other schools in Texas. These supplies include almost everything required in the daily life of human beings, such as groceries, dry goods, hardware, furniture, stationery, ink, pens, and pencils.

It is the duty of the Board to prepare the budget for all the state institutions, and the state government. It makes designs of all public buildings, parks and landscape gardening and has custody of all State parks and cemeteries. The Board of Control has all the powers of administration formerly possessed by the various boards of managers for the state eleemosynary institutions.

The Board of Control is composed of three members, who receive their appointment from the Governor. They serve for six years, but the terms of office are so arranged that one member is appointed every two years. The salary is five thousand dollars per year. The object in the creation of the Board was to secure greater economy and efficiency in the management of the state's business. This has been accomplished.

### Some of the other officials appointed by the Governor

Another very important commission has charge of planning and constructing a system of state highways. This Commission is also composed of three members who serve for six years.

The Board of Health is one of the most important of all these appointed by the Governor, because its services are directly related to the health of the people of the State.

To discuss all the various boards and commissions appointed by the Governor in detail, would require a separate volume. A few of the most important of them are as follows: The State Fire and Insurance Commission; The Prison Commission; The Industrial Accident Board; The Live Stock and Sanitary Commission; The Board of Water Engineers; The Mining Board; The Pardon Board; The State Text Book Commission; The State Librarian; The Tax Rate Board; The Boards of Regents for the University of Texas, The Agricultural and Mechanical College, The Technological College, The College of Industrial Arts for Women and the Board of Regents of the eight Teachers Colleges.

There are numerous other boards for the charitable institutions, for insane, deaf, dumb and blind people.

One of the most interesting of all Texas institutions connected with the executive department is the Texas Rangers. They are a group of brave men used by the Governor for special police purposes. They were established in 1836, before Texas became a state, when it was very difficult to keep law and order.

The Texas Rangers are famous throughout the world. They have been very efficient. They are expert shots and all of the criminals in the state fear them.

### The many kinds of courts of Texas

The judicial power of the government of Texas is vested in a Supreme Court, a Court of Criminal Appeals, Courts of Civil Appeals, district courts, county courts, commissioner's courts, courts of the justices of the peace, and in such other courts as may be provided by law.

Incorporated towns and cities have city courts, sometimes called Mayor's Courts. The Legislature has also provided for the establishment of a Commission of Appeals to assist the Supreme Court and a Commission of Criminal Appeals to assist the Court of Criminal Appeals.

The justice of the peace courts are the lowest in the judicial system. The state is divided into two hundred and fifty-four counties. The counties are subdivided into four precincts, and in each precinct there is one and sometimes two justice of the peace courts presided over by a justice of the peace. His salary is based on fees he receives for services he performs. His jurisdiction in criminal cases is limited to those in which the punishment is by fine only, not exceeding two hundred dollars. The same limit is also true for civil matters. Persons convicted in a justice of the peace court for violating a criminal law, and also those losing in civil suits where the amount in con-

troversy is over twenty dollars, may appeal to the County Court.

The City Courts do not have any civil jurisdiction. They may try persons for violating ordinances and laws passed by the city. Persons convicted in a City Court have the right to appeal to the County Court.

The County Courts are presided over by judges elected by the people for a term of two years. Their jurisdiction in civil cases is limited to appeals from the justice courts, or the city courts, and to cases where the amount in controversy is not over one thousand dollars. In criminal cases their jurisdiction is limited to cases where punishment may not be by death or confinement in prison.

The District Courts are perhaps the most important in the judicial system. They are courts of general jurisdiction. Cases are appealed to them from the County Court. These District Courts have original jurisdiction in all criminal cases of the grade of felony; in all cases of divorce; in all misdemeanors involving official misconduct; in all suits on behalf of the state to recover penalties; in all damage suits for slander or defamation of character; in all land suits where the amount in controversy is over five hundred dollars; and in contested elections. There are now over one hundred district courts in Texas. The judges are elected by the people for terms of four years. Their compensation is twenty-five hundred dollars per year.

There are eleven Courts of Civil Appeals in Texas. Cases come up to these courts from the district and county courts.

The State Supreme Court is the highest court to which civil cases may be appealed. Its appellate jurisdiction extends to questions of law arising in cases tried in any Court of Civil Appeals where the judges of that Court hold differently on the same question of law or where a statute of the State is held void. This court has the power to set aside decisions of the Civil Appeals Courts.

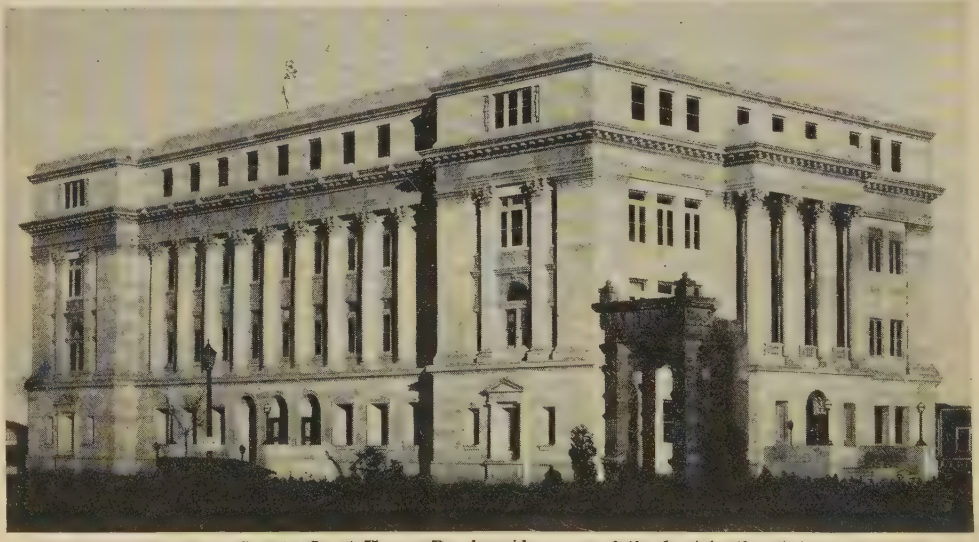
Final jurisdiction in criminal cases rests with the Court of Criminal Appeals. All criminal cases tried in any court in Texas may be appealed to this court by the person convicted of a crime against

Many of the older court houses in Texas were built when there was less architectural taste, and also less money, than there are to-day. Little fault can be found with the El Paso Court House, shown above. There are others equally attractive and most of the new buildings are good architecturally.

the laws of the state, but the state does not have the right to appeal to this court if the defendant was released in a lower court.

There has been created a Commission of Civil Appeals and also a Commission of Criminal Appeals to aid the Civil and Criminal Appeals Courts. The Commission of Civil Appeals is composed of six judges, but the Criminal Appeals Commission is composed of only two judges. The Commissions pass upon a large number of cases and write out opinions which are examined by the higher courts.

The Appeals Courts are all composed of three judges, one of whom is designated as chief justice. The judges are all elected by the people and hold office for six years.



Stephens County Court House, Breckenridge, one of the best in the state.

The qualifications of the judges of the county courts and justice of the peace courts are the same. They are required to be qualified voters, citizens of the United States and of Texas, and to have a knowledge of the laws of the state.

In addition to these qualifications a district judge must have been a practicing lawyer or a judge of a Texas Court for four years. The appellate judges must be at least thirty years of age and must have been practicing lawyers or judges in Texas for seven years.

## County Government in Texas

There are two hundred and fifty-four counties in Texas. The counties are subdivisions of the state made for purposes of local government. The counties are not all the same size or shape and they do not all have the same population. Brewster County in West Texas has an area of 5,935 square miles. In other words it is larger than Delaware, Rhode Island or Connecticut. Rockwall County in East Texas has only 149 square miles. In 1920 Crane County had only thirty-seven people, while Dallas County had 210,551. Until recently several counties with very small populations were not organized. At present there is only one unorganized county.

No matter where a person lives in Texas he is in some county. Each organized county has a county seat. The court house, jail and the county offices are all located at the county seat. Usually, but not always, the county seat is the largest town in the county, and is near the centre of the county.

The state does much of its work through the county, but most of the work of the county is in the interest of the people within the county itself. The county is the unit for elections, whether national, state, district or county. It is the basis of the division of the state into judicial districts. It is the unit for keeping the peace. The county usually maintains a home for the poor. It keeps a record of land surveys. Roads, bridges, ferries and drains are provided and kept in repair by the county. The county plays a very important part in the educational system of the state. Most coun-

ties have a County Superintendent of Schools. He is elected by the people of the county and paid by the county.

### How the Counties Are Organized for Government

The counties are divided into four precincts of about equal size, and each precinct selects a County Commissioner. These four County Commissioners, together with the County Judge, form what is known as the Commissioners Court. This is not a court like the other courts of Texas, but is really a group of men who do the business of the county. They usually hold their meetings on the second Monday of each month.

The county has a number of other officers. There is first the county attorney. Like the county judge he is elected by the people of the county. He is not only the county officer, but also a state officer. He represents the State in criminal cases in the county court, and the county in civil suits.

The sheriff, county clerk, county tax assessor, county tax collector, county treasurer, county auditor, county school board and county superintendent of schools are all elected by the voters of the county.

The sheriff is the chief law-enforcing officer of the county. He may have several assistants, called deputies. In each of the precincts there is a constable who helps the sheriff to enforce the laws.

The county clerk keeps a record of the meetings of the Commissioners Court, and of the financial condition of the county. He records deeds, and issues various licenses, including marriage licenses. The work of the other county officers you will know by their names. All serve two years. They must be twenty-one years of age, citizens of the United States and of Texas, and must have lived in the county at least six months preceding their election.

The business of any one of the larger cities is much greater than that of many counties, and quarters for the mayor and other officials must be provided. This is the Municipal Building, or City Hall, of Dallas. Even such a building is not always large enough to contain all departments of a city.

### Different Kinds of City Government in Texas

We might ask ourselves the question, why are there so many cities and towns in the United States? There are more conveniences in the city than in the country. You have all visited a large city and you have seen street cars, electric lights, paved streets, policemen walking up and down, and people hurrying about. Such policemen are not seen walking up and down a country road. The state and county governments cannot dig wells or furnish electric lights and power to all the rural people. But when a large number of people live together in a small area, they can all work together and provide

many things for all of them in common, like fire and police protection, electric lights, paved streets, sewerage systems, schools, libraries, hospitals, parks and playgrounds.

Now there must be someone to make plans for all these conveniences. There must be someone to raise the money to pave the streets and to pay firemen and policemen for their work. This work is done by the government of the city.

In order that any town or village may become incorporated for the purpose of local government in Texas, it must have not less than four hundred and not more than ten thousand inhabitants. There are also some rules which must be followed before the government can be established. First a petition signed by at least twenty of the inhabitants of the town or village, who are qualified voters must be filed with the county judge asking him to call an election to see if the people want to form a municipal corporation for local government.

After the petition is filed the county judge orders the election. If a majority of the voters favor incorporation of the town or village, the county judge orders another election at which time a mayor, a marshal, and the required number of aldermen, usually five are chosen.

Any incorporated town of six hundred persons or more may become incorporated as a city. The method of procedure is similar to that required for the incorporation of towns or villages, except that the petition must be signed by fifty qualified voters.

All cities and towns having a population of less than five thousand inhabitants are chartered under the general laws of the state to-day, but before 1912 the Legislature was authorized to pass a special law for the government of each city having a population of five thousand or over. The Legislature may make amendments to the general law and have the amendment apply to all cities to-day, but it may not amend the law for one city without affecting all the others at the same time.

Cities having a population of over five thousand have had since 1912 what is known as "home rule"; that is, each of these cities may frame its own charter and decide what form of government it will adopt, so long as it does not violate the state law.

By the Home Rule Act, cities to which it applies have been granted the rights of self government, under the general direction of State law. This general law defines broadly what powers these home rule cities may exercise. If a city has a charter granted by the Legislature prior to 1912, it may amend that charter under the Home Rule Act, or it may adopt an entirely new one.

There are to be found three forms of city government in Texas with variations of each. They are, the Mayor and Council form, Commission form and City Manager form of city government. The oldest type of city government in Texas is the mayor and council form, and most Texas cities still have this old form.

The next form of city government to be adopted in Texas was the Commission government. Texas is the birthplace of the Commission type of city government. The idea began in Galveston, Texas, in 1900, after the great flood which almost destroyed the city. The old form of government broke down during the crisis. The work of rebuilding the city and relieving the suffering was placed in the hands of five men styled commissioners. They made regulations and enforced them. Each commissioner gave his time and attention to one or two things.

This plan proved so effective in Galveston that the people asked the Legislature to do away with the old Mayor and Council government and allow them to adopt the Commission System permanently. Their request was granted. Since then the Galveston system of city government has been adopted by many Texas cities and by many other cities.

The most recent form of city government is the City Manager plan which has been adopted in a number of Texas cities. In this plan the people select a council or commission of from three to seven members, whose duty it is to select the City Manager. The City Manager, in conjunction with the City Commission, selects his subordinates. The City Manager has full charge of the city administration, and must be a good business man. The commission has power to select a man who does not live in that particular city, or even in Texas, to be the City Manager. He is usually paid a much better salary than the mayor received. City government in Texas to-day is very efficient.

From Sweet and Knox, On a Mexican Mustang through Texas.

**An artist's impression of a Texas cotton field fifty years ago.**

# STORIES, SONGS AND LEGENDS

TEXAS is rich in stories. First there were the explorers Coronado, Cortez and La Salle, and Jean Lafitte, the pirate of the Gulf. There are legends of the Alamo, reminiscences of pioneering, and an Indian lore. Two of the richest sources of Texan stories are the cowboy and the ranger. A large body of folk-lore has been collected and preserved by the Texas Folk-lore Society, whose editor, J. Frank Dobie, has journeyed on horseback through remote regions to talk with folks themselves. Professor Dorothy Scarborough, of Columbia University, has collected negro songs of Texas, besides preserving much folk material in her novel, The Wind. John A. Lomax, who for three years held a traveling fellowship from Harvard, has collected songs of the cattle trail and cow camp.

One Indian story deals with the origin of the bluebonnet. The land of the Aztecs had been visited by a pestilence. At last the voice of the Great Spirit proclaimed that to atone for the wickedness of the people, some sinless being must be sacrificed. An Aztec maiden offered herself, and as she ascended the hill to the altar, her bonnet dropped from her shoulders. The next morning the hillside was covered with flowers the shape and color of her bonnet, petal-splotched with the hue of her spilled blood.

The Indians of Texas have a story which may have originated in some actual flood. Once upon a time, runs the tale, the Ripas warred upon all other tribes, killing the young braves of the Karankawas, stealing their squaws and horses, driving their old men and children to the islands of the Gulf. At last the Great Spirit became angered and spoke to them from a sky that cracked with thunder and shot forked fire. For days the black clouds poured their burden upon the earth till all the land was covered, and all the tribes of the Ripas had been drowned. Then, and only then did the Great Spirit smile again, smile upon the Karankawas, bid them seek again their homes. But where had been but one mighty river, now flowed two streams, the white man's Brazos, and the red man's Colorado.

The early mission Fathers found, to their amazement, that some Texas Indians believed in one god and a soul that rises when it leaves the body and travels along a road that leads into the

sunset. It goes to the Great Captain, Ayo-Caddi, where it waits in the House of Death till the Day of Judgment, when all good souls are reunited, and together enter a better world behind the sky, while their enemies are banished to the land of the evil one for everlasting punishment.

In the Llano Valley stands a cliff with a stream at its foot. In the old days, it is told, a band of Comanches whose chief, White Cloud, had a beautiful daughter, Winona, camped at the foot of the cliff. Trout dimpled the clear stream, deer roamed the woods, the sheer precipice cut off the cold winds that came roaring out of the north in winter, and from its top the sun-drenched plains could be viewed for miles. A long day's march to the north the Spanish had built a presidio which was filled with hated soldiers. One of these, Don Juan, had looked with the eyes of desire on Winona. For this, her accepted lover, Mewanee, swore vengeance and gathered a band of braves to go with him to destroy the presidio. At his parting with the girl he vowed eternal faith, promising that should he not return, he would beckon her from where he waited in the Happy Hunting Ground. The warriors rode away. After many suns had swung across the sky, the braves could be seen returning, but Winona from her post on the cliff saw that her lover was not with them. That night when the moon rose over the edge of the cliff she heard Mewanee's spirit calling, and raising her arms, she flung herself off into space—that she might join him.

### A LEGEND OF SAN CAJA AND ONE OF THE GUADALUPE

Under lonely Mount San Caja in southwest Texas is a cave with the mouth halfway up the mountainside. Among its galleries and grottoes was one which the Mexican bandits used for a treasure room. Here they piled bags upon bags of Spanish doubloons and Mexican square dollars, silver-mounted spurs and bullion from the silver mines. One night a dragon with fiery breath and a spiked tail appeared and devoured the bandits, and to this day no Mexican will venture into that cave for the treasure.

A cowpuncher turned prospector, made his headquarters with the Mescalero Indians whose reservation was near the White Mountains, in the Big Bend. The chief had a pretty daughter, Nonick, with whom the young man fell in love, but the head men of the tribe would not consent to her marrying a poor man. Secretly she showed her lover a handful of gold nuggets her father had found in the hills south of the Guadalupe Pass. It was a region haunted by evil spirits and no Indian would venture there. One landmark was a cave of skeletons. The young prospector found the cave into which at a certain hour of the afternoon the sun shone to such a depth that he could plainly see three skeletons. But for years he tried in vain to find the gold. In 1892 he met "Old Man Sublett" with two sacks of gold which he had found in a place of exactly this description, but the exact location he would not divulge save to his nine-year-old son. The boy, Ross Sublett, tried when he was grown to find the mine, but without success. That cave of skeletons is in the Russell Mountains and people still search for what has become known as the Sublett Mine.

### JEAN LAFITTE, THE PIRATE OF THE GULF

Pirates flourished during the early part of the nineteenth century because the Embargo Acts passed by the United States, and especially the act prohibiting anyone to import slaves after 1808, tempted many to carry on a secret trade in the forbidden items. They called themselves privateers, but those who suffered at their hands spoke of them as pirates and smugglers. The ports along the Gulf of Mexico, with their bayous and cane-brakes, and their dark cypress swamps, were especially good hiding-places for these law-breakers. When Jean Lafitte, an adventure-loving blacksmith of New Orleans, decided to turn smuggler, he selected an island of the Grand Terre, sixty miles west of the mouth of the Mississippi River. Tall, of compelling personality, Lafitte wore a picturesque garb of green cloth, with a crimson sash, high boots and a wide swash-buckling hat. At first—according to one legend—he and his band of adventurers merely received goods brought in by privateers; but as soon as they could buy a few vessels of their own, Lafitte secured legal permission—in the form of letters of marque and reprisal from Cartagena—to do his own privateering. In a few years he was making such a good thing of it that the merchants of New Orleans saw in him a dangerous rival, and appealed to the Governor of

Louisiana, who issued a proclamation forbidding piracy, and offered five hundred dollars for the head of Lafitte. "What, ho!" laughed the Frenchman, "but I, in turn, offer fifteen thousand dollars for the head of the Governor."

### A PIRATES' PARADISE WHERE GALVESTON NOW STANDS

The merchants next demanded that the government of the United States do something about it. Commodore Patterson came with a fleet to break up the free-booting and Lafitte had to take to the woods. Then came the War of 1812. In some way the pirate learned the plans of the British fleet. These, and his own services in defense of New Orleans, he offered General Jackson. For bravery in battle the Frenchman afterwards received full pardon for his free-booting from President Madison. Thereafter he attacked only Spanish vessels. With a thousand daring men he established a pirates' paradise on the uninhabited Island of Galveston, and soon the Spanish doubloons were kept in bushel bags. Lafitte and his men captured jewels, furs and oriental rugs, rare wines, and gold-embroidered altar-cloths; they brought in negro slaves to sell in New Orleans. In time they built a fort, also a town which they called Campeche. Lafitte himself dwelt in a baronial red brick mansion, the Red House, where he offered regal entertainment. It is said that when General Lallemand and his unfortunate colony lost their ships near Galveston, Lafitte turned Robin Hood of the sea and gave them a ship on which to return to France.

In 1820, whether by Lafitte's orders or otherwise, his men unwisely sunk an American vessel in Matagorda Bay, after which the United States sent a man-o'-war after them. Lafitte suavely went out to meet the captain, offering the most beguiling hospitality, but did not succeed in turning the officer from his purpose. The pirates had to vacate the island. Lafitte divided the booty, dismissed most of his followers, and with a chosen handful sailed away. Somewhere off the coast of Yucatan, it is said, a hurricane overtook them and they were never seen again.

### THE GHOST OF LAFITTE STILL GUARDS THE TREASURE

Many are the tales of buried treasure left by Lafitte. One story has it that Lafitte anchored offshore near La Porte, and rowed to the beach with two men who carried a heavy iron chest. Blindfolding his helpers, Lafitte led them somewhere beyond the screening grapevines. Two hours later he returned in the murky dusk—alone! Nor were the two men ever seen thereafter. Certain it is that, one stormy night when the surf boomed along the bay like a soul in torment, and the wind moaned through the cracks, a traveler took refuge in the deserted house. The storm-drenched wayfarer built a huge fire on the hearth, but so extraordinary a chill hung about the place that he could not get warm, and rolled himself to sleep with his scalp prickling. He was awakened by an icy touch. Eyes, the compelling eyes of a tall, dark man with a crimson sash, bade him follow to an inner room. The ghostly visitor pointed to the floor. "Beneath here," he said, "lies buried more gold than is good for any man. Dig for it! But you must use it solely for beneficence. You may not spend it selfishly, or dire things will befall. I paid for the treasure with my soul. With it, you can lighten the burden of guilt I carry." Lacking the courage, however, to remain, the traveler fled the place, nor has any other man dared to spend a night in what is known as the "haunted house of La Porte."

One of the legends which has led men to disembowel mountains, drain lakes and turn rivers from their courses was that of the silver mine of San Saba. In 1750, a prospector, Bernardo de Miranda, found a place where the ore lay in the red earth in chunks the size of lizards. He took "thirty jack-loads" of this ore to Mexico City to be smelted. Picture the train of pack-mules, bells jingling, ears rotating rhythmically, as his vaqueros led them in strings of five along the sun-baked trails, their panniers heavy with the shining metal! This ore, he found, was very rich. That it might be the better mined, the Spaniards established a mission on the San Saba River. James Bowie, who later gave his life at the Alamo, was said to have learned the secret of the silver horde. If so, it died with him.

### THE COURAGE AND HARDIHOOD OF PIONEER WOMEN

Volumes could be filled with pioneer reminiscences and tales of the Texas frontier, which may or may not have been improved upon as they have been recounted

by successive generations. As may be seen from the accounts here given, the brave women who ventured into the wilderness of the early days, while they may have enjoyed the adventure, also faced the daily possibility of being tortured and massacred by hostile Indians. Men went about their business armed, too often to return to homes burned to the ground, to find their wives slain and their daughters captured. To the pioneer mother a spiral of thin gray smoke on the horizon, a spiral of dust approaching to the "klop-klop" of hoofbeats, or the snap of a branch in the woods was the signal for her to gather her children and barricade the cabin, with musket, powder and bullets to hand.

We are told that when Mrs. Jane Wilson was a bride on her way to California, in 1853, with a party of twelve men including her father, her husband and his two young brothers, some of their horses were stolen one night just beyond the Guadalupe Mountains, the men went in pursuit of the thieving red men, but her husband and father and all but three of the white men were killed. The forlorn expedition went on to El Paso, then Mrs. Wilson, the two boys and a German and a Mexican teamster, started back across the plains. This time a band of Comanches came upon them, captured the woman and compelled her to do their cooking. One night when they had made camp near a marsh she managed to hide in a cottonwood stump and the Indians went on without her. She was soon reduced to eating raw frogs and in time she became so weak that she could not move from her stump. Then along came five Pueblo Indians, red men of a vastly different sort, who showed her every kindness until they had escorted her to Santa Fé. Her experiences, however, had driven her out of her mind.

### Rough and Ready Frontier Methods

As an instance of pioneer pluck, a story is recounted of a woman who lived in Young County who was ironing one day when a panther came up and grabbed her baby. She rescued the child by hammering the beast on the head with her hot iron.

One woman, Mary C. Blackburn, whose husband went to war in 1864, has left letters telling how no able white men were left in the village of Nolan, how she had to work in the cornfield all day, then sit up half the night spinning and weaving blankets for the soldiers, while the oldest of five little girls held the candle. She also hauled wood and water and drove to the mill thirty miles away with a yoke of oxen. Whenever the dog howled as if there were Indians around, the women and children of the neighborhood would "fort up."

In the very early days there was no flour, and women baked loaves of pumpkin bread by stewing the pumpkin, adding salt if they had it, and cornmeal. They raised gourds for use as dishes and containers and made forks of twisted wire. If they didn't want to bring fire from a neighbor's, they could start a blaze by spinning wire, that is, by doubling a copper thread and twisting it, then attaching it to the spinning-wheel. When a spark came, they caught it with cotton. Log cabins even when they had clay floors were more comfortable than sod houses, whose roofs not only leaked when it rained but continued to drip thin mud for days afterwards. The women dyed their homespun clothing with walnut leaves or home-grown indigo, wove coarse cotton for bed cords and cured the hams of bears. They plaited wheat straw to make hats.

### The First Corn Crop in Texas

This is the way one of the first corn crops was planted. The grandmother of A. W. Eddins and her family started in an ox-wagon, entering Texas at Red River and reaching the mouth of the Colorado around Christmas time. They built a cabin and the men brought in venison and bear steaks, but they had no bread. Now the Colorado River bottom was covered with cane-brakes. One day the dogs chased a bear into the tall reeds and the boys set the brakes afire to drive it forth. When the blaze died down there was left a cleared field sprinkled with ashes. Mr. Eddins' grandmother, it is recounted, took a sharp stick and went up and down the field punching holes, into which her sister dropped corn. The grain sprouted and in time the roasting ears began to form. But now whole families of raccoons arrived to feast on it, and the two girls only saved their crop by tying the noisy old hound dog in the middle of the field every night.

It was not all trouble in the Texas of

the old days; Christmas was celebrated with fireworks. Either the boys would bore a hole in a log and then set off a charge of powder, or they would soak a ball of carpet rags in oil, light it and toss it into the air. But first there was a "turkey shoot" before dawn, or perhaps a "possum hunt," and if anyone had found a bee tree, it was saved for Christmas. The day progressed through a series of egg-nogs spicy with nutmeg, a candy pull and corn popping around the huge stone fireplace, to "wrastlin'" matches and an evening of square dances on the rough floor of puncheons, to the music of someone's violin. For a candy pull, they would set a big wash boiler in the yard, start a fire around it and pour in sorghum molasses. When it was boiled, the boys and girls would grease their hands with hog lard to pull the taffy.

### CAPTAIN BILL McDONALD AND THE TEXAS RANGERS

"Captain Bill," everyone called him. During twenty-five years' warfare against crime on the Texas frontier, no one ever thought it necessary to explain that he meant William Jesse McDonald, who served successively as Deputy Sheriff, Deputy U. S. Marshal, Ranger Captain and State Revenue Agent. Captain Bill was long and lean like a buckskin thong, and as enduring. Deceptively mild of manner when not on the war-path, with his humorous blue eyes, he had one peculiarity—his prominent ears fairly prickled forward. Certainly no fox could trail his game more unerringly, and Captain Bill was accounted the best rapid-fire marksman in the state. He himself, the "bad men" of the old days came to believe, was bullet-proof. For all that, he was a modest man.

He was born in 1852, during the California gold rush. His father was a Mississippi planter of the old feudal type, and young Bill used to hunt runaway slaves through the swamps. By the time he came to Texas the back country of the Cherokee strip was the abode of outlaws known as the Land Creek Gang, usually individual squatters—half-breeds and squaw men. The Captain gathered them all in, single-handed, in one day. To identify the men he wanted, he rode through the country ostensibly to take orders for fruit trees. "By gum," said one bewhiskered squatter, "eating peaches like them would be like holdin' up the Santa Fé express." Captain Bill asked interested questions, till the man finally invited him to join in on the next hold-up. Little by little the Captain came by the data he needed. On the day when he was due to deliver the trees, he went the rounds with his wagon and took the entire gang by surprise.

### CAPTAIN JEFF'S LUCKY NUMBER AND THE INDIAN BIG FOOT

Captain W. Jeff Maltby spent nine years on the trail of Big Foot, the Kiowa chief. Beginning about 1865, a band of Indians had been raiding the settlements every time the moon was full. Usually they drove off horses and cattle. A number of times they murdered whole families. Always Captain Jeff found the footprints of some uncommonly huge Indian near the scene; and always the redskins, when pursued, managed to escape across the San Saba.

Captain Jeff was a tall, lion-shouldered six footer with keen gray eyes that saw signs other people overlooked, and a nose that could literally smell Indians. Once in trying to reach the San Saba to head off Big Foot, he rode eighty miles in the first twenty-four hours, then in the next twenty-eight hours, stopping only to feed or change horses, ninety-five miles more.

Eventually Captain Jeff got together a company of seventy-five men and assembled them at Brownwood, but the Indians continued to commit their depredations without being caught. So bold, indeed, had they become, that one night when sixteen Rangers were cooking supper ten miles from Fort Concho, twenty-five yelling savages rode through camp, firing arrows and bullets, knocking the blazing wood helter-skelter and stampeding all the horses. The Captain's horse, old Selim, had a way of throwing any stranger who tried to ride him, and returning to his master. This was one of countless times when Selim came back.

The next full moon, the Indians stole a band of horses in San Saba County. Now the Captain always declared that nine was his lucky number. Gathering a scouting party of nine men, he started out on the ninth day of the ninth month at nine in the morning—it was the ninth year that he had been trying to capture Big Foot. This time, as dusk fell, they were able to creep upon the Indians as the latter were cooking supper. Captain

Jeff saw Big Foot aiming a six-shooter at his heart, but quick as thought, the Captain shot the hammer off the Indian's gun, the hammer penetrated Big Foot's neck and killed him.

### A FEW SAMPLES OF TEXAN SONGS AND BALLADS

After the battle of San Jacinto, people sang, to the tune of "Auld Lang Syne,"

"On San Jacinto's crimson plain
Brave Houston met the foe,
And set his sturdy heel upon
The chief of Mexico.

"When Santa Anna's star went down,
The Lone Star rose on high,
And blazed aloft a brilliant light
In freedom's cloudless sky."

Custer's last fight, on the Big Horn, June, 1876, has been commemorated in a number of songs. One has fourteen stanzas, beginning,

"It was just before George Custer's last fight
Two soldiers drew their rein,
With a clasping hand and a parting word,
For they never might meet again."

By stanza eight we learn that:

"'I have a mother dearest home—
Write to her tenderly.'"

"They rode together to the crest of the hill
Where the redskins shot like hail,
Poured death among the ranks of the little band
And scalped them as they fell."

Many Texans living to-day will remember the old-time cowboy dance, an affair to which whole families drove, arriving by sundown, putting the children to sleep, and staying till after breakfast in the morning, while the "punchers" often rode fifty or a hundred miles in order to take part. The "caller" would guide the movements of the square dance in carrying tones:

"Choose your partner, form a ring,
Figure eight, and double L swing. . . .

"Rope the cow, and kill the calf,
Swing your partner, a round and a half. . . .

"Swing 'em east and swing 'em west,
Swing the girl that you like best."

The chorus of a favorite ballad runs:

"I can see the cattle grazing o'er the hills at early morn;
I can see the camp-fires smoking at the breaking of the dawn;
I can hear the broncos neighing! I can hear the cowboys sing!
I'd like to be in Texas when they roundup in the Spring."

The frontier songs reflect much of the sentiment of the times, as in:

"We lay the crown of memory
Upon the place of rest,
Where noble heroes lie asleep
Within earth's icy breast.
For those who fell at Alamo
And those who died at Mier,
And those brave hearts still at Goliad,
All claim the silent tear.

CHORUS:

"Then strike the harp for those who fought
For freedom, long ago,
At San Jacinto and the Mier
And blood-stained Alamo."

### COW CAMP AND CATTLE TRAIL IN BALLAD AND RIDING SONG

Here is a fragment of a favorite:

"Let us ride together,—
Blowing mane and hair,
Careless of the weather,
Miles ahead of care,
Ring of hoof and snaffle,
Swing of waist and hip,
Trotting down the twisted road
With the world let slip."

A song, Lasca, that reflects the refrain, "In Texas, down by the Rio Grande," starts out:

"I want free life, and I want fresh air;
And I sigh for the canter after the cattle,
The crack of the whips like shots in battle,
The medley of hoofs and horns and heads
That wars and wrangles and scatters and spreads;
The green beneath and the blue above,
And dash and danger, and life and love—
And Lasca!"

An old Scotch and English song has its Texas version, popular in:

"Come on an' take some Johnny cake, . . .
For that and Independence make
A full blood Yankee Doodle."

The Cowboy likes to "yip" out the chant of the bad man:

"Born high up on the Guadalupe
Raised on thorny prickle pear,
Quarreled with alligators
And fought grizzly bear!"

Every Texan loves a good horse. A favorite old ballad that has survived for over a hundred years, Mi Caballo Bayo, is translated:

"Never again to his corral will return
My loyal horse, never return;
He will not neigh with pleasure
When someone caresses him.
Cursed be the evil fate
That took him suddenly away.
Oh, my poor dun horse,
How I cried
When he died!"

A real cowpuncher, Elwood Adams, wrote one favorite of the cattle trails. A part goes:

"I don't need no art exhibits
When the sunset does his best,
Paintin' everlastin' glories
On the mountains of the west.
And your operas look foolish
When the night bird starts his tune
And the desert's silver-mounted
By the kisses of the moon.

"Just a-ridin', just a-ridin',
I don't envy kings nor czars
When the coyotes down the valley
Are a-singin' to the stars."

Many songs are of anonymous origin. One such, The Cowboy, begins:

"He wears a big hat and big spurs and all that,
And leggins of fancy fringed leather;
He takes pride in his boots and the pistol he shoots,
And he's happy in all kinds of weather.

"Wild and reckless!
Just got out o' Texas!

"Wild and woolly!
And full of fleas!
Ain't never been curried
Below the knees!"

Thus runs a familiar chant, which the cow-man loves to punctuate with a falsetto: "*Ya*-hooooooooo!"

### NEGRO WORK SONGS, "BLUES" AND BALLADS

Dr. Dorothy Scarborough, besides teaching at Columbia University, has turned out several novels in which negro "voodoo stuff" plays a part. Her collection, published under the title, On the Trail of Negro Folk-Songs, includes work-songs and dance-songs, lullabies and play-songs.

Waco Negroes chant something that combines African and English in a way reminiscent of the beating of tom-toms in the jungle. It runs:

"Go fay, go fay!
Ingo-ango-fay!
Circle this house in a hoo-sal lay,
In a-ingo-ango fay.
Go fay, go fay!
Ingo-ango-fay!
Will jew my 'ligion away.
Mumbi, kiki, joki lo,
In a-ingo-ango fay!"

Every Texan knows how Negroes love to personify. Bodies swaying rhythmically, feet patting, hands clapping, they improvise songs inspired by the turning of the train wheels. One favorite sung in Angelina County goes:

"Better git yo' ticket,
Better git yo' ticket,
Train's a-comin'.
Lord-ee-ee, Lord-ee-ee!
Um-um-um-um-um-um-um-um!"

Sometimes the Negro accompanies the train song by running his fingers rapidly over the strings of a banjo in imitation of the sound of the moving train—even to the whistle at the crossing.

The "blues," with their jerky tempo and barbaric melody ending on a sudden high note enable a group of singers to change words and tune according to their mood. This specimen rises to a mighty crescendo in every stanza on "oh, babe!"

"Look where de train done gone,
Look where de train done gone,
Look where de train done gone, oh, babe,
Gone never to return!

"I hope dat Katy train don't have a wreck,
I hope that dat Katy train don't have a wreck,
I hope that Katy train don't have a wreck, *oh* babe,
An' kill my darlin' babe!"

A favorite of the East Texas sawmill district runs:

"I'll tell you somep'n that bothers my mind;
Po' li'l Ella laid down and died.
I'll tell you somep'n that bothers my mind:
Po' li'l Ella laid down and died."

Construction gangs lighten their labor with song. Cotton picking and corn shucking have always been occasions for communal singing. Laundresses have their "rubbing songs," bootblacks their "shine reels." This woodchopper's song is intoned to the ring of the axe, while the sounds of the refrain, hissing, humming, whistling and crooning are punctuated by the rhythmic blows of the axe.

"Ole Mister Oak Tree, yo' day done come!
Zim-zam-zip-zoom!
Gwine chop you down an' cahy you home!
Bim-bam-biff boom!

"Buhds in de branches fin' anodder nes'!
Zim-zam-zip-zoom!
Ole Mister Oak Tree, he gwine to hees res'!
Bim-bam-biff boom!"

The Brazos Bottom version of the Boll Weevil song runs:

"'Oh, Wifie,' said Honey,
'I don't know where we're at.
If the Boll Weevil goes on like this,
We'll all be busted flat,
We'll have no home, we'll have no home.'"

# HYMN OF THE ALAMO

(Air, Marseilles Hymn)

## By Reuben Marmaduke Potter

THE Hymn of the Alamo, in the words of Professor Dobie, is the "most dignified, thoughtful and inspiriting" of all poems upon the Texas Revolution. The author, Reuben Marmaduke Potter, was born in New Jersey in 1802 and went to Mexico about 1827. He is said to have been living at Matamoros at the time of the Alamo Massacre, and to have heard the story from acquaintances among the Mexican officers. He was profoundly shocked by the occurrence and this poem is the result. He was forced to leave Mexico, removed to Texas, and spent the remainder of his long life in the state. For years he was chief clerk in the State Comptroller's office at Austin. He died in 1890. The poem was published in the Telegraph and Texas Register, October 4, 1836.

"RISE, man the wall, our clarion's blast
Now sounds its final revellie;
This dawning morn must be the last
Our fated band shall ever see:—
To life but not to hope, farewell—
Yon trumpet's clang, and cannon's peal,
And storming shout, and clash of steel,
Is ours, but not our country's knell:
Welcome the Spartan's death—
'Tis no despairing strife—
We fall, we die, but our expiring breath
Is freedom's breath of life.

"Here, on this new Thermopylæ,
Our monument shall tower on high,
And 'Alamo' hereafter be
In bloodier fields the battle cry."
Thus Travis from the rampart cried,
And when his warriors saw the foe,
Like angry billows move below,
Each dauntless heart at once replied,
"Welcome the Spartan's death—
'Tis no despairing strife—
We fall, we die, but our expiring breath
Is freedom's breath of life."

They come—like autumn's leaves they fall;
Yet, hordes on hordes, they onward rush;
With gory tramp they scale the wall
Till numbers the defenders crush.
The last was fell'd the fight to gain—
Well may the ruffians quake to tell,
How Travis and his hundred fell,
Amid a thousand foemen slain.
They died the Spartan's death
But not in hopeless strife,
Like brothers died, and their expiring breath
Was freedom's breath of life.

# APPENDICES

## APPENDIX I

### The Unanimous Declaration of Independence Made by the Delegates of the People of Texas in General Convention at the Town of Washington on the 2nd Day of March, 1836

WHEN a government has ceased to protect the lives, liberty and property of its people, from whom its legitimate powers are derived, and for the advancement of whose happiness it was instituted, and so far from being a guarantee for the enjoyment of those inestimable and inalienable rights, becomes an instrument in the hands of evil rulers for their oppression: When the Federal Republican Constitution of their country, which they have sworn to support, no longer has a substantial existence, and the whole nature of their government has been forcibly changed without their consent, from a restricted federative republic, composed of sovereign states to a consolidated central military despotism in which every interest is disregarded but that of the army and the priesthood—both the eternal enemies of civil liberty, the ever-ready minions of power, and the usual instruments of tyrants:

When, long after the spirit of the constitution has departed, moderation is at length so far lost by those in power that even the semblance of freedom is removed, and the forms, themselves, of the constitution discontinued; and so far from their petitions and remonstrances being regarded, the agents who bear them are thrown into dungeons; and mercenary armies sent forth to force a new government upon them at the point of the bayonet: When, in consequence of such acts of malfeasance and abdication, on the part of the government, anarchy prevails, and Civil Society is dissolved into its original elements. In such a crisis, the first law of nature, the right of self-preservation—the inherent and inalienable right of the people to appeal to first principles and take their political affairs into their own hands in extreme cases enjoins it as a right towards themselves and a sacred obligation to their posterity to abolish such government and create another in its stead, calculated to rescue them from impending dangers, and to secure their future welfare and happiness.

STEPHEN FULLER AUSTIN
Statue by Pompeo Coppini which stands over his grave in Austin.

Nations, as well as individuals, are amenable for their acts to the public opinion of mankind. Statement of a part of our grievance is, therefore, submitted to an impartial world, in justification of the hazardous but unavoidable step now taken of severing our political connection with the Mexican people, and assuming an independent attitude among the nations of the earth.

The Mexican government, by its colonization laws, invited and induced the Anglo-American population of Texas to colonize its wilderness under the pledged faith of a written constitution that they should continue to enjoy that constitutional liberty and republican government to which they

had been habituated in the land of their birth, the United States of America. In this expectation they have been cruelly disappointed, in as much as the Mexican nation has acquiesced in the late changes made in the government by General Antonio Lopez de Santa Anna, who, having overturned the constitution of his country, now offers as the cruel alternative either to abandon our homes, acquired by so many privations, or submit to the most intolerable of all tyranny, the combined despotism of the sword and the priesthood.

It has sacrificed our welfare to the State of Coahuila, by which our interests have been continually depressed through a jealous and partial course of legislation carried on at a far distant seat of government by a hostile majority, in an unknown tongue; and this too, notwithstanding we have petitioned in the humblest terms, for the establishment of a separate state government, and have, in accordance with the provisions of the national constitution presented to the General Congress a republican constitution which was, without just cause, contemptuously rejected.

It incarcerated in a dungeon, for a long time, one of our citizens, for no other cause but a zealous endeavor to procure the acceptance of our constitution and the establishment of a state government.

It has failed and refused to secure on a firm basis, the right of trial by jury, that palladium of civil liberty, and only safe guarantee for the life, liberty and property of the citizen.

It has failed to establish any public system of education, although possessed of almost boundless resources (the public domain) and although it is an axiom in political science, that unless a people are educated and enlightened it is idle to expect the continuance of civil liberty, or the capacity for self-government.

It has suffered the military commandants stationed among us to exercise arbitrary acts of oppression and tyranny; thus trampling upon the most sacred rights of the citizen and rendering the military superior to the civil power.

It has dissolved by force of arms, the State Congress of Coahuila and Texas, and obliged our representatives to fly for their lives from the seat of government; thus depriving us of the fundamental political right of representation.

It has demanded the surrender of a number of our citizens and ordered military detachments to seize and carry them into the Interior for trial; in contempt of the civil authorities, and in defiance of the laws and the constitution.

It has made piratical attacks upon our commerce, by commissioning foreign desperadoes, and authorizing them to seize our vessels, and convey the property of our citizens to far-distant ports for confiscation.

It denies us the right of worshipping the Almighty according to the dictates of our own conscience, by the support of a national religion calculated to promote the temporal interest of its human functionaries rather than the glory of the true and living God.

It has demanded us to deliver up our arms, which are essential to our defence, the rightful property of freemen, and formidable only to tyrannical governments.

It has invaded our country by sea and by land, with intent to lay waste our territory and drive us from our homes, and has now a large mercenary army advancing to carry on against us a war of extermination.

It has, through its emissaries, incited the merciless savage, with the tomahawk and scalping knife, to massacre the inhabitants of our defenceless frontiers.

It hath been, during the whole time of our connection with it, the contemptible sport and victim of successive military revolutions, and hath continually exhibited every characteristic of a weak, corrupt, and tyrannical government.

These, and other grievances, were patiently borne by the people of Texas until they reached that point at which forbearance ceases to be a virtue. We then took up arms in defence of the national constitution. We appealed to our Mexican brethren for assistance. Our appeal has been made in vain. Though months have elapsed, no sympathetic response has yet been heard from the Interior. We are, therefore, forced to the melancholy conclusion that the Mexican people have acquiesced in the destruction of their liberty and the substitution therefor of a Military Government—that they are unfit to be free and incapable of self-government.

The necessity of self-preservation, therefore, now decrees our eternal political separation.

We therefore, the delegates with plenary powers, of the people of Texas, in solemn convention assembled, appealing to a candid world for the necessities of our condition, do hereby resolve and declare that our political connection with the Mexican Nation has forever ended;

and that the people of Texas do now constitute a free sovereign and independent republic, and are fully invested with all the rights and attributes which properly belong to independent nations; and conscious of the rectitude of our intentions, we fearlessly and confidently commit the issue to the decision of the Supreme Arbiter of the destinies of Nations.

RICHARD ELLIS, *President.*

Test:

H. S. KIMBLE, *Secretary.*

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# APPENDIX II

## CHIEF EXECUTIVES OF TEXAS

*Provisional Governor*

Henry Smith . . . . . 1835–36

*Presidents of the Republic*

David G. Burnet (provisional) . 1836

Sam Houston . . . . . 1836–38

Mirabeau B. Lamar . . . . 1838–41

Sam Houston . . . . . 1841–44

Anson Jones . . . . . 1844–46

*Governors of the State*

J. Pinckney Henderson . . 1846–47

George T. Wood . . . . . 1847–49

P. Hansborough Bell (resigned) 1849–53

James W. Henderson (acting) Dec. 3–21, 1853

E. M. Pease . . . . . 1853–57

H. R. Runnels . . . . . 1857–59

Sam Houston (deposed March 16, 1861) . . . . . 1859–61

Edward Clark (lieut.-gov., acting) 1861

F. R. Lubbock . . . . . 1861–63

Pendleton Murrah . . . . 1863–65

A. J. Hamilton (provisional) . 1865–66

J. W. Throckmorton (removed Aug. 8, 1867) . . . . . 1866–67

E. M. Pease (provisional; resigned Sept. 30, 1869) . . 1867–69

*E. J. Davis . . . . . 1870–74

Richard Coke (resigned Dec. 1, 1876) . . . . . 1874–76

R. B. Hubbard (lieut.-gov., filled unexpired term) . . . 1876–79

O. M. Roberts . . . . . 1879–83

John Ireland . . . . . 1883–87

L. S. Ross . . . . . 1887–91

J. S. Hogg . . . . . 1891–95

C. A. Culberson . . . . . 1895–99

Joseph D. Sayers . . . . 1899–1903

Samuel W. T. Lanham . . 1903–07

Thomas M. Campbell . . . 1907–11

Oscar Branch Colquitt . . 1911–15

James E. Ferguson (impeached, 1917) . . . . . 1915–17

William Pettus Hobby (lieut.-gov., filled unexpired term) . 1917–19

William Pettus Hobby . . 1919–21

Pat Morris Neff . . . . . 1921–25

Miriam Amanda Ferguson . . 1925–27

Dan Moody . . . . . 1927–

* As Pease resigned September 30, 1869, and Davis did not take his place until January 17, 1870, the state was under military law in the interim under General Reynolds.

# APPENDIX III

## THE COUNTIES OF TEXAS

TEXAS has 254 counties, a much larger number than any other state. In fact, no other state except Georgia (which has 160) has half so many. They are of every shape and size. In the eastern part they are irregular both in shape and size, and the lines often follow the windings of a stream, or else the Gulf Coast. The straight lines often indicate that a larger county has been divided. In the west, particularly in the Panhandle, the shape is generally square, or at least rectangular. Brewster, across the Pecos, is the largest, larger than the State of Connecticut. Tiny Rockwell, in North Texas, has only 149 square miles, while Somervell, Camp, Aransas, Morris, Delta, Rains and Franklin all have less than three hundred square miles. On the other hand, there are about seventy-five with more than a thousand square miles each.

Under Mexican rule Texas was divided into three departments (Nacogdoches, Brazos, Bexar), with eighteen municipalities (precincts). The first Texan government created five additional precincts. The Constitution of 1836 ignored the departments, but recognized the following precincts for the purpose of representation: Austin, Brazoria, Bexar, Colorado, Sabine, Gonzales, Goliad, Harrisburgh (Harris), Jasper, Jefferson, Liberty, Matagorda, Mina (Bastrop), Nacogdoches, Red River, Victoria, San Augustine, Shelby, Refugio, San Patricio, Washington, Milam and Jackson. These were organized as counties in 1837, with the addition of Houston (cut from Nacogdoches) and Montgomery (cut from Washington).

These twenty-five counties of 1837 still exist, but much reduced in size. Then Bexar extended indefinitely to the west; Red River extended the whole length of that stream; Milam and others were large. Though the Constitution provided that no new county should be formed with an area less than nine hundred square miles, these original counties have been divided and subdivided until the average size of counties in the region of early settlement is considerably less than nine hundred square miles. About 125 in all have been made from the original Bexar County, or from counties cut from the old county.

The first counties in the west were, many of them, larger than some states of the Union. The Constitution of 1876 permitted the legislature to create counties in advance of settlement. Until organized, these were to be attached for administrative purposes to any adjoining organized county. One, Loving, is still unorganized. In 1876, the legislature created over fifty counties, some of which were not organized until much later. Most of these western counties to-day are nearly square, about thirty miles on the side, and contain approximately nine hundred square miles. Since 1900 few new counties have been created, and there are not likely to be many more. Formerly distance from the county seat and the difficulty of reaching it, added to the ambition of a growing town to become a county seat, served as arguments for making new counties. Since good roads and motor cars have almost abolished distance, the arguments in favor of new counties no longer have so much force. The expense of maintaining a county organization is considerable, and many students of government think it would be wiser to consolidate some of the existing counties rather than to make others.

The names of these 254 counties tell much of the history of the state, but also raise some interesting questions. In most of the states the number of Indian names is large, but in Texas, Cherokee, Comanche, Nacogdoches, Pecos, Panola and Wichita seem to be all. There are more Spanish names, generally

descriptive or religious. Examples of the former are Atacosa, Bosque, El Paso, Frio, Matagorda, Llano, Presidio and Colorado; of the second are Aransas, Guadalupe, Refugio, San Jacinto and San Patricio. In many cases the name had been given to a river or other natural feature, or perhaps to a mission, and the county took its name from it.

There are a few English descriptive names, as Live Oak, Limestone, Freestone, Red River and Rockwall, but many more of the counties bear names of persons. There are a few memorials of French or Spanish explorers, pioneers or prominent personages. We have La Salle, Bexar, Galveston, Medina and Uvalde, and a few Mexicans are remembered, as Zavala, Victoria, Hidalgo and Gonzales. There are also a few counties named for Texans of Mexican descent, as Garza and Zapata, but, on the whole, the number of names of Spanish origin is surprisingly small.

Most Texan counties are named for Texans. To be sure, we have a few presidents of the United States—Washington, Jefferson, Madison, Jackson, Tyler and Polk; a few Revolutionary patriots, as Jasper, Newton, Marion, Montgomery, Fayette, Shelby and Knox; several statesmen and politicians of the period before the Civil War, as Clay, Calhoun, Upshur, Cass, Walker, Dallas and Wise. The Confederacy is represented by Jeff Davis, Stephens, Lee, Stonewall and Hood, in addition to several Texans actively engaged. It is to be noted that the greatest Texan soldier, Albert Sidney Johnston, is not commemorated. There was already a Johnson County, organized in 1854.

The early Texans are well represented. Besides Austin, we find Bastrop, DeWitt, Edwards, Leon and Robertson and others among the colonizers. There are others named for pioneers. The difficulties with Mexico, and the Revolution, bring a host of names to the fore—Travis, Bowie, Crockett and other less distinguished heroes of the Alamo; Fannin, Duval and Shackelford of Goliad; Milam and Deaf Smith of Bexar. When we come to San Jacinto and the establishment of the Republic the names multiply. Houston, Lamar, Rusk, Burnet, Sherman, Hockley, Zavala, Wharton, Burleson, Hale, Lamb, Jones, Archer, Borden, Somervell and many others. Many of the men who took part in the War for Independence were prominent for years afterward, and perhaps their later service had something to do with their selection.

The remaining names are difficult to classify, but there seems to be a preponderance of politicians and public officials. The names of many governors are found, but by no means all, and the historian would probably rank some of those omitted higher than some included. There are fewer jurists or Congressmen. Several Texas Rangers are remembered. Many county names commemorate men of only local importance, or else a prominent family of the region. In some cases, perhaps, support for the proposal to form a new county was sought by the offer of local immortality.

The amount of energy and emotion expended in the struggle for new counties has been enormous. In some legislatures important measures affecting the state as a whole were neglected because of the time spent in discussing the desirability of a new county or counties. It is probable that votes for or against important bills were cast in exchange for votes on the question of new counties. This is only another example of the fact mentioned elsewhere, that the people of Texas have too often thought of their locality or their section rather than of the state as a whole.

The table on the following pages gives the county, the county seat, the date of organization, the 1920 population and area (in most cases), and the origin of the name. Where the authorities disagree, we have given the more plausible explanation. It will be interesting to study this table in connection with your history.

| COUNTY | COUNTY SEAT | ORG. | POP. (1920) | AREA (SQ. M.) | ORIGIN OF NAME |
|---|---|---|---|---|---|
| Anderson | Palestine | 1846 | 34,318 | 938 | Kenneth L. Anderson, v.-p., Republic. |
| Andrews | Andrews | 1910 | 350 | 1,565 | Richard Andrews, patriot. |
| Angelina | Lufkin | 1846 | 22,287 | 940 | Angelina (Little Angel) River. |
| Aransas | Rockport | 1871 | 2,064 | 240 | Aransas (Our Lady Aranzazu) River. |
| Archer | Archer City | 1880 | 5,254 | 872 | Dr. Branch Tanner Archer, patriot. |
| Armstrong | Claude | 1890 | 2,816 | 903 | A pioneer family. |
| Atascosa | Jourdanton | 1856 | 12,702 | 1,358 | Boggy land. |
| Austin | Bellville | 1837 | 18,874 | 728 | Stephen F. Austin. |
| Bailey | Muleshoe | 1919 | 517 | 1,030 | A hero of the Alamo. |
| Bandera | Bandera | 1856 | 4,001 | 821 | Bandera (flag) Pass. |
| Bastrop | Bastrop | 1837 | 26,649 | 867 | Baron de Bastrop, who aided Austin. |
| Baylor | Seymour | 1879 | 7,027 | 880 | Henry W. Baylor, prominent citizen. |
| Bee | Beeville | 1858 | 12,137 | 856 | Gen. Barnard E. Bee, Sr. |
| Bell | Belton | 1850 | 46,412 | 1,083 | Peter H. Bell, gov., Texas. |
| Bexar | San Antonio | 1837 | 202,096 | 1,263 | San Antonio de Bexar. |
| Blanco | Johnson City | 1858 | 4,063 | 750 | Blanco (white or chalky) River. |
| Borden | Gail | 1891 | 965 | 895 | Gail Borden, patriot and inventor. |
| Bosque | Meridian | 1854 | 18,032 | 975 | Bosque (woody) River. |
| Bowie | Boston | 1841 | 39,472 | 873 | James Bowie, hero of Alamo. |
| Brazoria | Angleton | 1837 | 20,614 | 1,340 | Brazos (arms or forks) River. |
| Brazos | Bryan | 1843 | 21,975 | 597 | Location on Brazos River. |
| Brewster | Alpine | 1887 | 4,822 | 5,935 | H. P. Brewster, jurist. |
| Briscoe | Silverton | 1892 | 2,948 | 903 | Andrew Briscoe, patriot. |
| Brooks | Falfurrias | 1911 | 4,560 | 974 | J. S. Brooks, ranger. |
| Brown | Brownwood | 1857 | 21,682 | 956 | Henry S. Brown, Indian fighter. |
| Burleson | Caldwell | 1846 | 16,855 | 684 | Gen. Edward Burleson, patriot. |
| Burnet | Burnet | 1854 | 9,499 | 974 | David G. Burnet, statesman. |
| Caldwell | Lockhart | 1848 | 25,160 | 511 | Matthew Caldwell, Indian fighter. |
| Calhoun | Port Lavaca | 1846 | 4,700 | 563 | John C. Calhoun, statesman. |
| Callahan | Baird | 1877 | 11,844 | 854 | James H. Callahan, ranger. |
| Cameron | Brownsville | 1848 | *75,000 | *986 | Ewen Cameron, commander at Mier. |
| Camp | Pittsburg | 1874 | 11,103 | 207 | J. L. Camp, patriot. |
| Carson | Panhandle | 1888 | 3,078 | 893 | Samuel O. Carson, politician. |
| Cass | Linden | 1846 | 30,041 | 951 | Lewis Cass, statesman. |
| Castro | Dimmitt | 1891 | 1,948 | 896 | Henry Castro, prominent citizen. |
| Chambers | Anahuac | 1858 | 4,162 | 618 | Thomas J. Chambers, politician. |
| Cherokee | Rusk | 1846 | 37,633 | 1,049 | A tribe of Indians. |
| Childress | Childress | 1887 | 10,933 | 733 | Geo. C. Childress, politician. |
| Clay | Henrietta | 1873 | 16,864 | 1,158 | Henry Clay, statesman. |
| Cochran | Morton | 1924 | 67 | 869 | Robert Cochran, pioneer. |
| Coke | Robert Lee | 1889 | 4,557 | 931 | Richard Coke, gov., Texas. |
| Coleman | Coleman | 1864 | 18,805 | 1,290 | Robert M. Coleman, patriot. |
| Collin | McKinney | 1880 | 49,609 | 878 | Collin McKinney, pioneer. |
| Collingsworth | Wellington | 1880 | 9,154 | 898 | James T. Collingsworth, chief just., Texas. |
| Colorado | Columbus | 1837 | 19,013 | 972 | Colorado (red water) River. |
| Comal | New Braunfels | 1846 | 8,824 | 559 | Comal (basin) River. |
| Comanche | Comanche | 1856 | 25,748 | 948 | A tribe of Indians. |
| Concho | Paint Rock | 1878 | 5,847 | 918 | Concho (shell) River. |
| Cooke | Gainesville | 1849 | 25,667 | 902 | Wm. G. Cooke, patriot. |
| Coryell | Gatesville | 1854 | 20,601 | 1,085 | James Coryell, explorer. |
| Cottle | Paducah | 1892 | 6,901 | 1,012 | Geo. W. Cottle, killed at Alamo. |
| Crane | Crane | 1887 | 37 | 878 | W. C. Crane, pres., Baylor Univ. |
| Crockett | Ozona | 1891 | 1,500 | 3,215 | David Crockett, hero of Alamo. |
| Crosby | Crosbyton | 1886 | 6,084 | 870 | Stephen Crosby, hero of Alamo. |

*Estimated, 1927.

| COUNTY | COUNTY SEAT | ORG. | POP. (1920) | AREA (SQ. M.) | ORIGIN OF NAME |
|---|---|---|---|---|---|
| Culberson | Van Horn | 1911 | 912 | 3,787 | David B. Culberson, statesman. |
| Dallam | Dalhart | 1891 | 4,528 | 1,532 | James W. Dallam, author and jurist. |
| Dallas | Dallas | 1846 | 210,551 | 859 | Geo. M. Dallas, v.-p., U. S. |
| Dawson | Lamesa | 1905 | 4,309 | 903 | Nicholas Mosby Dawson, patriot. |
| Deaf Smith | Hereford | 1880 | 3,747 | 1,549 | Erastus ("Deaf") Smith, patriot. |
| Delta | Cooper | 1870 | 15,887 | 261 | Location on Sulphur River. |
| Denton | Denton | 1846 | 35,355 | 952 | John B. Denton, pioneer. |
| DeWitt | Cuero | 1846 | 27,971 | 879 | Green DeWitt, colonizer. |
| Dickens | Dickens | 1880 | 5,876 | 881 | J. Dickens, hero of Alamo. |
| Dimmit | Carrizo Springs | 1880 | 5,296 | 1,360 | Philip Dimmit, patriot. |
| Donley | Clarendon | 1882 | 8,035 | 906 | Stockton P. Donley, jurist. |
| Duval | San Diego | 1876 | 8,251 | 1,703 | Capt. B. H. Duval, killed at Goliad. |
| Eastland | Eastland | 1873 | 58,505 | 925 | T. B. Eastland, patriot. |
| Ector | Odessa | 1891 | 760 | 892 | M. D. Ector, brig. gen. and chief justice. |
| Edwards | Rock Springs | 1883 | 2,283 | 1,960 | Hayden Edwards, colonizer. |
| Ellis | Waxahachie | 1850 | 55,700 | 975 | Richard Ellis, prominent citizen. |
| El Paso | El Paso | 1871 | 101,877 | 923 | El Paso (The Pass). |
| Erath | Stephenville | 1856 | 28,385 | 1,083 | Geo. B. Erath, ranger, surveyor. |
| Falls | Marlin | 1850 | 36,217 | 745 | Falls on the Brazos. |
| Fannin | Bonham | 1838 | 48,186 | 838 | James W. Fannin, patriot. |
| Fayette | Lagrange | 1838 | 29,965 | 968 | Marquis de la Fayette. |
| Fisher | Roby | 1886 | 11,009 | 885 | S. Rhoads Fisher, prominent citizen. |
| Floyd | Floydada | 1890 | 9,758 | 1,011 | D. Floyd, killed at Alamo. |
| Foard | Crowell | 1891 | 4,747 | 612 | Maj. Robert J. Foard, lawyer. |
| Fort Bend | Richmond | 1838 | 22,931 | 792 | Fort on bend of Brazos. |
| Franklin | Mt. Vernon | 1875 | 9,304 | 289 | Benjamin C. Franklin, jurist. |
| Freestone | Fairfield | 1851 | 23,264 | 882 | Freestone rock. |
| Frio | Pearsall | 1871 | 9,296 | 1,124 | Frio (cold) River. |
| Gaines | Seminole | 1905 | 1,018 | 1,540 | James Gaines, pioneer. |
| Galveston | Galveston | 1839 | 53,150 | 395 | Count Bernardo de Galvez. |
| Garza | Post | 1876 | 4,253 | 870 | A pioneer family of San Antonio. |
| Gillespie | Fredericksburg | 1848 | 10,015 | 1,109 | Richard A. Gillespie, ranger. |
| Glasscock | Garden City | 1893 | 555 | 866 | Geo. W. Glasscock, Sr., patriot. |
| Goliad | Goliad | 1837 | 9,348 | 799 | Goliath (the gigantic) of Gath. |
| Gonzales | Gonzales | 1837 | 28,438 | 1,020 | Rafael Gonzales, gov., Coahuila. |
| Gray | Lefors | 1902 | 4,663 | 899 | Peter W. Gray, jurist. |
| Grayson | Sherman | 1846 | 74,165 | 942 | Peter W. Grayson, politician. |
| Gregg | Longview | 1873 | 16,767 | 312 | John Gregg, brig.-gen., C. S. A. |
| Grimes | Anderson | 1846 | 23,101 | 812 | Jesse Grimes, prominent citizen. |
| Guadalupe | Seguin | 1846 | 27,719 | 703 | (Our Lady of) Guadalupe River. |
| Hale | Plainview | 1888 | 10,104 | 1,036 | John C. Hale, patriot. |
| Hall | Memphis | 1890 | 11,137 | 901 | Warren D. C. Hall, prominent citizen. |
| Hamilton | Hamilton | 1858 | 14,676 | 833 | James Hamilton, statesman. |
| Hansford | Hansford | 1889 | 1,354 | 882 | John M. Hansford, jurist. |
| Hardeman | Quanah | 1884 | 12,487 | 761 | Bailey and T. J. Hardeman, patriots. |
| Hardin | Kountze | 1858 | 15,983 | 862 | The Hardin family of Liberty. |
| Harris | Houston | 1837 | 186,667 | 1,654 | John R. Harris, colonizer. |
| Harrison | Marshall | 1842 | 43,565 | 872 | Jonas Harrison, pioneer. |
| Hartley | Channing | 1891 | 1,109 | 1,507 | Oliver Cromwell Hartley, jurist. |
| Haskell | Haskell | 1885 | 14,193 | 923 | Charles R. Haskell, patriot. |
| Hays | San Marcos | 1848 | 15,920 | 623 | Col. John C. ("Jack") Hays, ranger. |
| Hemphill | Canadian | 1887 | 4,280 | 873 | John Hemphill, jurist. |
| Henderson | Athens | 1846 | 28,327 | 946 | J. Pinckney Henderson, gov., Texas. |
| Hidalgo | Edinburg | 1852 | *38,110 | *1,629 | Miguel Hidalgo, Mexican patriot. |

*1922.

| COUNTY | COUNTY SEAT | ORG. | POP. (1920) | AREA (SQ. M.) | ORIGIN OF NAME |
|---|---|---|---|---|---|
| Hill | Hillsboro | 1853 | 43,332 | 966 | Dr. Geo. W. Hill, sec. war, Republic. |
| Hockley | Levelland | 1921 | 137 | 867 | George W. Hockley, soldier. |
| Hood | Granbury | 1866 | 8,759 | 405 | Gen. John B. Hood. |
| Hopkins | Sulphur Springs | 1846 | 34,791 | 813 | A pioneer family. |
| Houston | Crockett | 1837 | 28,601 | 1,231 | Gen. Sam Houston. |
| Howard | Big Spring | 1882 | 6,962 | 891 | Volney E. Howard, politician. |
| Hudspeth | Sierra Blanca | 1917 | 962 | 4,621 | Claude Benton Hudspeth, Congressman. |
| Hunt | Greenville | 1846 | 50,350 | 893 | Gen. Memucan Hunt, politician. |
| Hutchinson | Plemons | 1901 | 721 | 879 | Anderson Hutchinson, jurist. |
| Irion | Sherwood | 1889 | 1,610 | 998 | Robert A. Irion, politician. |
| Jack | Jacksboro | 1857 | 9,863 | 962 | Wm. H. and P. C. Jack, politicians. |
| Jackson | Edna | 1837 | 11,244 | 893 | Andrew Jackson, pres., U. S. |
| Jasper | Jasper | 1837 | 15,569 | 978 | William Jasper, hero Amer. Revol. |
| Jeff Davis | Fort Davis | 1887 | 1,445 | 2,263 | Jefferson Davis, pres., Confed. |
| Jefferson | Beaumont | 1837 | 73,120 | 920 | Thomas Jefferson, pres., U. S. |
| Jim Hogg | Hebbronville | 1913 | 1,914 | 1,140 | James Stephen Hogg, gov., Texas. |
| Jim Wells | Alice | 1911 | 6,587 | 791 | James B. Wells, Judge. |
| Johnson | Cleburne | 1854 | 37,286 | 740 | Col. Middleton T. Johnson, ranger. |
| Jones | Anson | 1880 | 22,323 | 922 | Anson Jones, pres., Republic. |
| Karnes | Karnes City | 1854 | 19,049 | 692 | Henry W. Karnes, ranger. |
| Kaufman | Kaufman | 1848 | 41,276 | 834 | David S. Kaufman, politician. |
| Kendall | Boerne | 1862 | 4,779 | 598 | Geo. Wilkins Kendall, writer. |
| Kenedy | Sarita | 1921 | * 700 | *1,440 | Mifflin Kenedy, patriot. |
| Kent | Clairemont | 1891 | 3,335 | 875 | R. Kent, hero of Alamo. |
| Kerr | Kerrville | 1856 | 5,842 | 1,142 | James Kerr, colonizer. |
| Kimble | Junction | 1876 | 3,581 | 1,301 | Henry Kimble, hero of Alamo. |
| King | Guthrie | 1891 | 655 | 867 | Wm. King, hero of Alamo. |
| Kinney | Brackettville | 1874 | 3,746 | 1,312 | H. L. Kinney, founder Corpus Christi. |
| Kleberg | Kingsville | 1913 | 7,837 | 698 | Robert Kleberg, pioneer, soldier. |
| Knox | Benjamin | 1886 | 9,240 | 862 | Henry Knox, sec. war, U. S. |
| Lamar | Paris | 1841 | 55,742 | 945 | Mirabeau B. Lamar, pres., Republic. |
| Lamb | Olton | 1908 | 1,175 | 1,022 | Geo. A. Lamb, patriot. |
| Lampasas | Lampasas | 1856 | 8,800 | 740 | Lampasas (Lampazos, burdock) River. |
| La Salle | Cotulla | 1880 | 4,821 | 1,561 | Robert Cavalier Sieur de la Salle. |
| Lavaca | Hallettsville | 1846 | 28,964 | 950 | Lavaca (the cow) River. |
| Lee | Giddings | 1874 | 14,014 | 562 | Gen. Robert E. Lee. |
| Leon | Centerville | 1846 | 18,286 | 1,101 | Martin de Leon, explorer. |
| Liberty | Liberty | 1837 | 14,637 | 1,160 | Meaning "Land of Liberty." |
| Limestone | Groesbeck | 1846 | 33,283 | 974 | Limestone rock. |
| Lipscomb | Lipscomb | 1887 | 3,684 | 888 | Abner S. Lipscomb, jurist. |
| Live Oak | George West | 1856 | 4,171 | 1,116 | Live oak groves. |
| Llano | Llano | 1856 | 5,360 | 971 | Llano (plain) River. |
| Loving | | 1893 | 82 | 753 | Oliver Loving, pioneer. |
| Lubbock | Lubbock | 1891 | 11,096 | 868 | Col. T. S. Lubbock, Terry Ranger. |
| Lynn | Tahoka | 1903 | 4,751 | 864 | G. W. Lynn, prominent citizen. |
| McCulloch | Brady | 1876 | 11,020 | 1,073 | Gen. Ben McCulloch, ranger. |
| McLennan | Waco | 1850 | 82,921 | 1,049 | Neil McLennan, Sr., pioneer. |
| McMullen | Tilden | 1877 | 952 | 1,302 | John McMullen, colonist. |
| Madison | Madisonville | 1854 | 11,956 | 495 | James Madison, pres., U. S. |
| Marion | Jefferson | 1860 | 10,886 | 391 | Francis Marion, patriot Am. Revol. |
| Martin | Stanton | 1884 | 1,146 | 904 | Wylie Martin, patriot. |
| Mason | Mason | 1858 | 4,824 | 969 | Gen. R. B. Mason. |
| Matagorda | Bay City | 1837 | 16,589 | 1,136 | Mata Gorda (dense small brush). |
| Maverick | Eagle Pass | 1871 | 7,418 | 1,251 | Samuel A. Maverick, patriot. |

*Estimated, 1927.

| COUNTY | COUNTY SEAT | ORG. | POP. (1920) | AREA (SQ. M.) | ORIGIN OF NAME |
|---|---|---|---|---|---|
| Medina | Hondo | 1848 | 11,679 | 1,353 | Medina River, named for explorer. |
| Menard | Menard | 1871 | 3,162 | 914 | Col. M. B. Menard, pres. Galveston Co. |
| Midland | Midland | 1885 | 2,449 | 887 | Location bet. Ft. Worth and El Paso. |
| Milam | Cameron | 1837 | 38,104 | 959 | Benjamin R. Milam, hero of Bexar. |
| Mills | Goldthwaite | 1887 | 9,019 | 696 | John T. Mills, jurist. |
| Mitchell | Colorado | 1881 | 7,527 | 885 | Eli and Asa Mitchell, colonists. |
| Montague | Montague | 1858 | 22,200 | 929 | Daniel Montague, Indian fighter. |
| Montgomery | Conroe | 1837 | 17,334 | 1,017 | Gen. Richard Montgomery. |
| Moore | Dumas | 1892 | 571 | 921 | Edwin Ward Moore, comm. Texas Navy. |
| Morris | Daingerfield | 1875 | 10,289 | 259 | W. W. (or Richard?) Morris, jurist. |
| Motley | Matador | 1891 | 4,107 | 1,030 | Dr. Wm. Motley, killed at San Jacinto. |
| Nacogdoches | Nacogdoches | 1837 | 28,457 | 1,059 | A tribe of Indians. |
| Navarro | Corsicana | 1846 | 50,624 | 1,060 | Juan Antonio Navarro, patriot. |
| Newton | Newton | 1846 | 12,196 | 889 | John Newton, hero Amer. Revol. |
| Nolan | Sweetwater | 1881 | 10,868 | 880 | Philip Nolan, martyred explorer. |
| Nueces | Corpus Christi | 1846 | 22,807 | 775 | Nueces (pecan) River. |
| Ochiltree | Perryton | 1889 | 2,331 | 775 | W. B. Ochiltree, jurist. |
| Oldham | Vega | 1881 | 709 | 1,543 | Williamson S. Oldham, Sr., jurist. |
| Orange | Orange | 1852 | 15,379 | 363 | Oranges long grown there. |
| Palo Pinto | Palo Pinto | 1857 | 23,431 | 958 | Palo Pinto (painted trees) River. |
| Panola | Carthage | 1846 | 21,755 | 842 | Panola (Indian for cotton). |
| Parker | Weatherford | 1856 | 23,382 | 875 | Family of Cynthia Ann Parker. |
| Parmer | Farwell | 1907 | 1,699 | 902 | Martin Parmer, patriot. |
| Pecos | Fort Stockton | 1872 | 3,857 | 4,134 | Pecos (pueblo dwellers) River. |
| Polk | Livingston | 1846 | 16,784 | 1,217 | James K. Polk, pres., U. S. |
| Potter | Amarillo | 1887 | 16,710 | 934 | Robert Potter, prominent citizen. |
| Presidio | Marfa | 1875 | 12,202 | 3,812 | El Presidio, an ancient garrison. |
| Rains | Emory | 1870 | 8,099 | 267 | Emory Rains, pioneer. |
| Randall | Canyon | 1889 | 3,675 | 937 | Horace Randall, brig. gen. Civ. War. |
| Reagan | Stiles | 1903 | 377 | 1,071 | John H. Reagan, statesman. |
| Real | Leakey | 1913 | 1,461 | 619 | Justus Real, state senator. |
| Red River | Clarksville | 1837 | 35,829 | 1,039 | Red River. |
| Reeves | Pecos | 1884 | 4,457 | 2,781 | Col. Geo. R. Reeves, politician. |
| Refugio | Refugio | 1837 | 4,050 | 740 | Mission, Our Lady of Refuge. |
| Roberts | Miami | 1889 | 1,469 | 882 | Gov. O. M., and J. S. Roberts, jurist. |
| Robertson | Franklin | 1838 | 27,933 | 872 | Sterling C. Robertson, colonist. |
| Rockwall | Rockwall | 1873 | 8,591 | 149 | Prehistoric underground stone wall. |
| Runnels | Ballinger | 1880 | 17,074 | 1,083 | Gov. Hiram G. Runnels, of Miss. |
| Rusk | Henderson | 1843 | 31,689 | 983 | Thomas J. Rusk, soldier, statesman. |
| Sabine | Hemphill | 1837 | 12,299 | 589 | Sabine (Mexican for cypress). |
| San Augustine | San Augustine | 1837 | 13,737 | 622 | Presidio of San Augustine de Ahumada. |
| San Jacinto | Cold Springs | 1870 | 9,867 | 602 | Battle of San Jacinto (Saint Hyacinth). |
| San Patricio | Sinton | 1837 | 11,386 | 676 | The patron saint of Ireland. |
| San Saba | San Saba | 1856 | 10,045 | 1,116 | San Saba (Holy Saturday) River. |
| Schleicher | El Dorado | 1901 | 1,851 | 1,387 | Gustave Schleicher, German colonist. |
| Scurry | Snyder | 1884 | 9,003 | 887 | Wm. R. Scurry, brig. gen., Confed. |
| Shackelford | Albany | 1874 | 4,960 | 947 | Dr. John Shackelford, spared at Goliad. |
| Shelby | Center | 1837 | 27,464 | 833 | Isaac Shelby, patriot of Ky. |
| Sherman | Stratford | 1869 | 1,473 | 935 | Gen. Sidney Sherman, patriot. |
| Smith | Tyler | 1846 | 46,769 | 920 | Gen. James Smith, pioneer. |
| Somervell | Glenrose | 1875 | 3,563 | 184 | Alexander Somervell, patriot. |
| Starr | Rio Grande | 1848 | 11,089 | 1,348 | Dr. James Harper Starr, patriot. |
| Stephens | Breckenridge | 1876 | 15,403 | 925 | A. H. Stephens, v.-p., Confed. |
| Sterling | Sterling City | 1891 | 1,053 | 948 | Capt. Sterling, buffalo hunter. |

| COUNTY | COUNTY SEAT | ORG. | POP. (1920) | AREA (SQ. M.) | ORIGIN OF NAME |
|---|---|---|---|---|---|
| Stonewall | Aspermont | 1888 | 4,086 | 852 | Gen. T. J. (Stonewall) Jackson. |
| Sutton | Sonora | 1890 | 1,598 | 1,521 | J. S. Sutton, ranger. |
| Swisher | Tulia | 1890 | 4,388 | 898 | John G. Swisher, patriot. |
| Tarrant | Fort Worth | 1850 | 152,800 | 903 | E. H. Tarrant, ranger. |
| Taylor | Abilene | 1878 | 24,081 | 908 | Edward Taylor, pioneer. |
| Terrell | Sanderson | 1905 | 1,595 | 2,635 | A. W. Terrell, legislator. |
| Terry | Brownfield | 1904 | 2,236 | 870 | B. F. Terry, of Terry Rangers. |
| Throckmorton | Throckmorton | 1878 | 3,589 | 879 | Dr. Wm. E. Throckmorton, pioneer. |
| Titus | Mt. Pleasant | 1846 | 18,128 | 398 | A. J. Titus, pioneer. |
| Tom Green | San Angelo | 1875 | 15,210 | 1,454 | Gen. Tom Green, soldier, C. S. A. |
| Travis | Austin | 1843 | 57,616 | 1,004 | Wm. B. Travis, hero of Alamo. |
| Trinity | Groveton | 1850 | 13,623 | 716 | Trinity (Father, Son and Holy Ghost) River. |
| Tyler | Woodville | 1846 | 10,415 | 908 | John Tyler, pres., U. S. |
| Upshur | Gilmer | 1846 | 22,472 | 600 | Abel P. Upshur, Sec. St., U. S. |
| Upton | Rankin | 1910 | 253 | 1,195 | John C. and W. F. Upton, patriots. |
| Uvalde | Uvalde | 1856 | 10,769 | 1,589 | Juan de Ugalde, gov., Coahuila (1778). |
| Val Verde | Del Rio | 1885 | 12,706 | 3,083 | Battle of Val Verde (green valley). |
| Van Zandt | Canton | 1846 | 30,784 | 831 | Isaac Van Zandt, politician. |
| Victoria | Victoria | 1837 | 18,271 | 890 | Guadalupe Victoria, pres., Mex. Repub. |
| Walker | Huntsville | 1846 | 18,556 | 791 | Robert J. Walker, author of "Walker Tariff." |
| Waller | Hempstead | 1873 | 10,292 | 519 | Edwin Waller, politician. |
| Ward | Barstow | 1892 | 2,615 | 827 | Thomas Wm. Ward, soldier. |
| Washington | Brenham | 1837 | 26,624 | 628 | George Washington. |
| Webb | Laredo | 1848 | 29,152 | 3,219 | James Webb, jurist. |
| Wharton | Wharton | 1846 | 24,288 | 1,112 | W. H. and J. A. Wharton, patriots. |
| Wheeler | Wheeler | 1879 | 7,397 | 895 | Royal T. Wheeler, jurist. |
| Wichita | Wichita Falls | 1882 | 72,911 | 604 | A tribe of Indians. |
| Wilbarger | Vernon | 1881 | 15,112 | 928 | Josiah Wilbarger, pioneer. |
| Willacy | Raymondville | 1911 | 4,000 | 854 | J. G. Willacy, politician. |
| Williamson | Georgetown | 1848 | 42,934 | 1,129 | Robert M. Williamson, jurist. |
| Wilson | Floresville | 1860 | 17,289 | 813 | James C. Wilson, patriot. |
| Winkler | Kermit | 1910 | 81 | 844 | Judge C. M. Winkler, patriot. |
| Wise | Decatur | 1856 | 23,363 | 863 | Henry A. Wise, statesman. |
| Wood | Quitman | 1850 | 27,707 | 657 | Geo. T. Wood, gov. |
| Yoakum | Plains | 1909 | 504 | 879 | Henderson Yoakum, historian. |
| Young | Graham | 1874 | 13,379 | 875 | Wm. Cook Young, ranger. |
| Zapata | Zapata | 1858 | 2,929 | 1,040 | Col. Antonio Zapata, stockman. |
| Zavalla | Batesville | 1884 | 3,108 | 1,348 | Lorenzo Zavala, patriot. |

**Buffalo Springs, not far from Lubbock, on the South Plains.**

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**Fort Concho,** U. S. military post in Tom Green County selected in *1871* as headquarters for the Fourth Cavalry. It was abandoned in *1889.*
**Fort Davis,** named for Jefferson Davis when Secretary of War in President Pierce's cabinet. An important U. S. cavalry post, built in *1852* at the foot of the Davis Mts., to protect the scattered settlers of the frontier and the mail carriers and freighters from marauding Indians.
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**Fort Griffin.** U. S. military post established in *1867* on the Clear Fork of the Brazos River in Shackleford County, named for Major-General Charles Griffin. The fort was the nucleus of a town of several hundred people which served as a market for buffalo hides. The post was abandoned in *1879* and the town decayed.
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**Fort Hudson,** established in *1855* as U. S. military post for protection against the Indians. It was abandoned at the beginning of the Civil War but was for a short time reoccupied in *1867.* It was located on the west bank of Devil's River twenty miles beyond the canyon known as Dead Man's Pass in Val Verde County.
**Fort Lancaster,** established in *1855* as U. S. military post a few miles east of the Pecos River in what is now Crockett County, for protection against the Indians. Abandoned in *1861.*
**Fort Richardson,** named for Gen. Israel Richardson, located in Jack County on a tributary of the West Fork of the Trinity River. Built by the Sixth U. S. Cavalry in *1867,* it later became an Indian school but was abandoned in *1918.*
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**Green, Thomas Jefferson** (*1801–63*). Soldier, born in N. Car. Studied at West Point, came to Texas in *1836* and was commissioned brigadier-general in the Texas army. He protested against the surrender at Mier (*1842*) and was one of ten to escape from Perote by cutting through rock eight feet thick. Sent to Texas congress (*1843*), he introduced a bill to make the Rio Grande the boundary of the Texas republic. He went to California in *1849,* introduced the bill to establish the state university, and returning to Texas laid out the town of Velasco and was the first to advocate a railway to the Pacific.
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**Johnston, Rienzi Melville** (*1850–1926*). Born at Sandersville, Ga. Came to Tex., *1878;* pres., editor and a chief stockholder of Houston Daily Post; apptd. U. S. Senator for unexpired term, *Jan. 4–29, 1913;* state senator, *1921–25.* First v.-p., Associated Press.
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**Long, James** ( *–1821*). Physician, born in Tenn. Led filibustering expedition from Natchez, *1819,* across the Sabine, capturing Nacogdoches, with the idea of "reclaiming what Monroe had given up." He was driven out but again invaded Texas and helped to capture La Bahia, *1821,* but was arrested and later shot in Mexico City after a quarrel with a Mexican soldier.
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**Lubbock, Francis Richard** (*1815–1905*). Governor of Texas, born in Beaufort, S. C. Went to Texas in *1835* as a merchant; comptroller of treasury of Republic; district clerk, *1843–60;* governor, *1861–63;* served in Confederate Army; president of the N. Y. and Texas Beef Preserving Co., *1874;* state treasurer, *1878–90.*
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**Magee, Augustus W.** (*continued*)
invasion of Mexico through Texas. Magee was the real though not the nominal leader of the party of eight hundred men which took the fort at La Bahia (Goliad) and withstood a four months' siege by the ousted Salcedo. Magee died probably of tuberculosis.
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**Maxey, Samuel Bell** (*1825–* ? ). U. S. Senator, born at Tompkinsville, Ky. Graduate West Point, *1846;* served in Mex. War; came to Texas, *1857;* supt. Indian Affairs; U. S. Senator, *1875–87.*
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**Milam, Benjamin R.** ("Old Ben") (*1790–1835*). Born in Kentucky, he came to Texas in *1818,* joined Long's expedition but was imprisoned in Mexico (*1819–22*). Riding to Monclova in *1827* to intercede for certain colonists he was again imprisoned, but escaped in time to march upon Goliad, and led a division of volunteers into San Antonio under heavy fire. A Texas county has been named for him.
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**Pease, Elisha Marshall** (*continued*)
*1834;* state legislator, *1846–50;* governor, *1853–57;* fostered building of railroads, establishment of free school system and state university. Appointed provisional governor in *1867,* but resigned, *1869. See* 224, 225
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**Santa Anna, Antonio Lopez de** (*1795–1876*). Mexican general and politician, born at Jalapa. Led the revolts which overthrew Iturbide (*1822*), Pedraza (*1828*) and Bustamante (*1832*); president of Mexico in *1833;* led the army against Texan revolutionists, *1836,* was defeated and captured at San Jacinto, but released on agreeing to favor Texan independence; lost a leg in defense of Vera Cruz, *1838.* Again became president in *1841,* dictator in *1843,* was exiled in *1845,* but recalled in *1846,* and commanded army in war with U. S. A. He again became dictator in *1853,* but was exiled in *1855.*
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**Smith, Henry** (*1784–1851*). Provisional governor of Texas, born in Ky. Came to Texas, *1821;* was leader in revolutionary party; planned provisional civil government of Texas; provisional governor, *1835–36;* secretary of treasury, *1836–38;* in Texas Congress, *1840–42;* went with his sons to the California gold fields in *1849. See* pages 20, 295-96.
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**Troutman, Joanna** (*1817–* ). The "Betsy Ross" of Texas, born at Knoxville, Ga. In *1835*, though she had never visited Texas, she designed a white silk flag with a blue star in the centre, inscribed on it "Liberty or Death," and presented it to the Georgia battalion which had been raised to aid the cause of Texan independence. In *1913* Gov. Colquitt secured permission to have her body removed to the State Cemetery in Austin; her picture hangs in the senate chamber, and her thimble is preserved in the State Library.
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